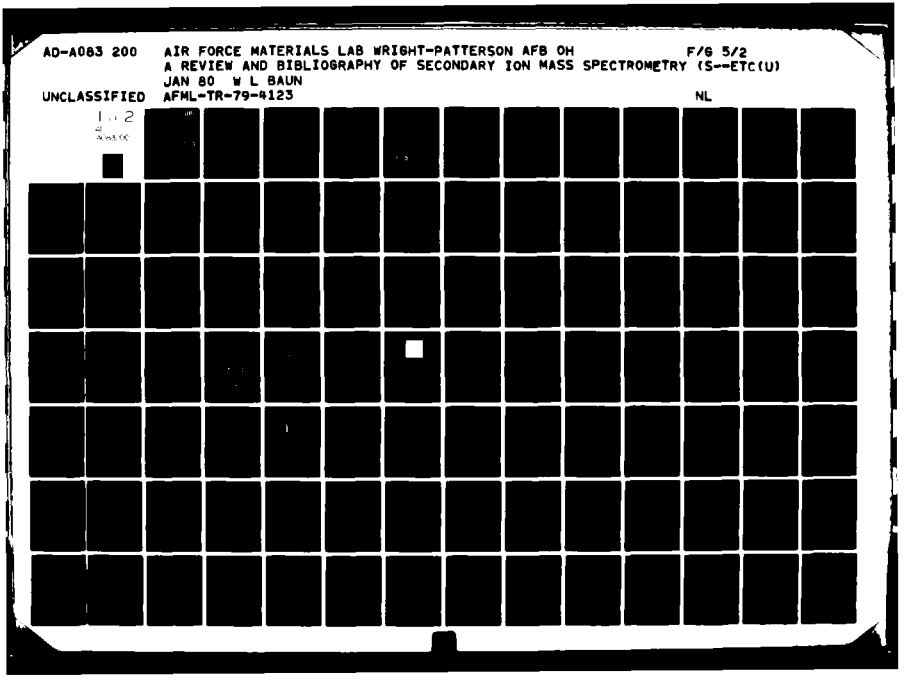
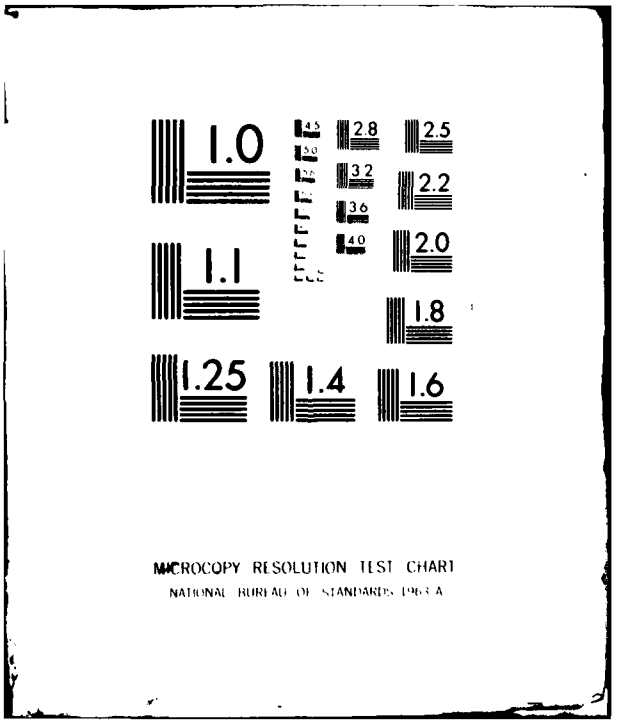
AD-A083 200 AIR FORCE MATERIALS LAB WRIGHT-PATTERSON AFB OH F/G 5/2
A REVIEW AND BIBLIOGRAPHY OF SECONDARY ION MASS SPECTROMETRY (S--ETC(U)
JAN 80 W L BAUN
UNCLASSIFIED AFML-TR-79-4123 NL




1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

AFML-TR-79-4123

(2) LEVEL II

AD A083200

A REVIEW AND BIBLIOGRAPHY OF SECONDARY ION MASS SPECTROMETRY (SIMS)

W. L. Baun
Mechanics and Surface Interactions Branch
Nonmetallic Materials Division

DTIC
ELECTE
APR 21 1980
S D
B

January 1980

TECHNICAL REPORT AFML-TR-79-4123

Report for Period June 1978 - June 1979

Approved for public release; distribution unlimited.

DDC FILE COPY

AIR FORCE MATERIALS LABORATORY
AIR FORCE WRIGHT AERONAUTICAL LABORATORIES
AIR FORCE SYSTEMS COMMAND
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

80 4 17 142

NOTICE

When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

This report has been reviewed by the Information Office (OI) and is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations.

This technical report has been reviewed and is approved for publication.

WILLIAM L. BAUN, Project Engineer
Mechanics & Surface Interactions Br.
Nonmetallic Materials Division

S. W. TSAI, Chief
Mechanics & Surface Interactions Br.
Nonmetallic Materials Division

FOR THE COMMANDER

J. M. KELBLE, Chief
Nonmetallic Materials Division

"If your address has changed, if you wish to be removed from our mailing list, or if the addressee is no longer employed by your organization please notify AFML/MBM, W-PAFB, OH 45433 to help us maintain a current mailing list".

Copies of this report should not be returned unless return is required by security considerations, contractual obligations, or notice on a specific document.

AIR FORCE/56780/25 March 1980 — 200

(9) Technical Rpt. Jun 78 - Jun 79

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

(14) 1. REPORT NUMBER: AFML-TR-79-4123

2. GOVT ACCESSION NO.: AD-A083 200

3. RECIPIENT'S CATALOG NUMBER:

(6) 4. TITLE (and Subtitle): A REVIEW OF SECONDARY ION MASS SPECTROMETRY (SIMS) and Bibliography

5. TYPE OF REPORT & PERIOD COVERED: Internal June 1978 - June 1979

6. PERFORMING ORG. REPORT NUMBER:

(10) 7. AUTHOR(s): W. L. Baun

8. CONTRACT OR GRANT NUMBER(s):

9. PERFORMING ORGANIZATION NAME AND ADDRESS:
Air Force Materials Laboratory
Air Force Systems Command
Wright-Patterson Air Force Base, Ohio

10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS:
Project 2419/Task 241902
W. U. D. 24190204

11. CONTROLLING OFFICE NAME AND ADDRESS:
Air Force Materials Laboratory
Air Force Wright Aeronautical Laboratories
Wright-Patterson Air Force Base, OH 45433

(11) 12. REPORT DATE: Jan 1980

(12) 13. NUMBER OF PAGES: 161

14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office): (16) 2419 (17) 241902

15. SECURITY CLASS. (of this report): Unclassified

15a. DECLASSIFICATION/DOWNGRADING SCHEDULE:

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Secondary Ion Mass Spectrometry, Review, Ions, SIMS, Sputtering, Ion-bombardment, Secondary Ions, Surface Characterization

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Secondary ion mass spectrometry (SIMS) is reviewed. Fundamental concepts of SIMS including the advantages and disadvantages are shown. Surface disturbances and fundamental collision phenomenon are discussed. Equipment is shown for SIMS, including the mass analyzer and the energy analyzer. Types of mass spectra are discussed including aspects of initial energy and energy distribution. Selection and use of atomic or polyatomic spectra are discussed along with molecular fingerprint spectra. Ion yield, an important aspect of

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

(1230)

20. Continued

SIMS analysis, is seen to be heavily influenced by oxygen either in the primary beam or on the surface. The advantages and limitations of depth profiling by SIMS are shown. Methods of neutralizing the positive charge accumulation on the surface are discussed. Two methods of imaging secondary ions are detailed and a combination of the SEM with SIMS is also discussed. The increasing popularity of SIMS is seen to be primarily due to the complementary nature of this technique with other surface methods. Applications of the method either as a stand-alone technique or in use with other techniques are seen to be very diverse.

FOREWORD

This technical report was prepared by W. L. Baun, Mechanics and Surface Interactions Branch, Nonmetallic Materials Division, Air Force Materials Laboratory (AFML/MBM). This work was initiated under Project 2419, "Nonmetallic and Composite Materials" and was administered by the Air Force Materials Laboratory. Work Unit Directive Monitor was T. W. Haas.

This report covers literature collected over the period June 1978 to June 1979 in the area of secondary ion mass spectrometry which is used to characterize adhesive bonding materials. The report was released by the author in June 1979.

DTIC
ELECTE
APR 2 1 1980
S D
B

ACCESSION for
NTIS White Section
DDC Buff Section
UNANNOUNCED
JUSTIFICATION
BY
DISTRIBUTION/AVAILABILITY CODES
Dist. AVAIL. and/or SPECIAL
A

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

LIST OF ILLUSTRATIONS (CONCLUDED)

LIST OF TABLES

SECTION I

INTRODUCTION

If a solid surface is bombarded by energetic ions, a complex process of energy transfer and electronic interaction occur in the surface and near surface of the solid. As a result of these interactions at the surface, electrons and atomic and molecular particles are ejected and photons are emitted. The interaction of the energetic ions with the solid results in the transfer of energy to ions and atoms in the solid and subsequent ejection of both neutral and ionized species.

The first SIMS experiments were performed in the late 1930's by Arnot and co-workers (Reference 1). The technique lay essentially fallow until 1949 when Herzog and Viehbock (Reference 2) described an ion source for mass spectrometry using the sputtering process, but even after this brief resurgence, it was almost ten years until further interest was evidenced by workers in this field. Honig (Reference 3) in 1958 began a rise of interest in the SIMS technique which widened during the 1960's. Reviews of early literature were published by Carter and Colligon (Reference 4) and Kaminsky (Reference 5). More modern reviews with emphasis on the SIMS technique as applied to surface analysis, have been authored by Benninghoven (Reference 6) and Werner (Reference 7). It is the purpose of this review to discuss fundamental concepts, advantages and disadvantages of SIMS for surface analysis along with collision phenomenon, such as sputtering and implantation. Equipment for the SIMS method will be briefly described. Aspects of secondary ion mass spectra will be considered including the species of the secondary ions, the ion yield, and experimental parameters. The complementary nature of SIMS to other surface characterization methods will be discussed. Finally, applications of the SIMS method will be considered. Appendices concerning nomenclature, isotopic abundances, and the sources of information on SIMS are included.

SECTION II

FUNDAMENTAL CONCEPTS

When a surface is bombarded with ions, atomic and molecular particles, electrons and photons are emitted from the surface as seen in Table 1 (Benninghoven). The ion as it strikes the surface and penetrates into the solid can undergo numerous collision processes, as seen in Figure 1 (Winters). The process under consideration here is No. 5 as seen in Figure 1; the reflected ion giving energy to a surface atom which is sputtered. A review of experimentation and theory of physical sputtering was prepared by Winters (Reference 8). The sputtering species, which are moved from the surface, are made up of both positive and negative ions, as well as neutral particles. Neutral particles have much greater abundance than ionic species and have also been used for surface analysis.

TABLE 1

EFFECT OF ION IMPACT ON A SOLID SURFACE INCLUDING EMISSION PROCESSES & CHANGES IN THE SURFACE ZONE

EMISSION PROCESSES	CHANGES IN THE SURFACE OF THE TARGET
Atomic and molecular particles Neutrals Positive ions Negative ions Excited particles	Loss of surface particles Sputtering Recoil implantation
Electrons Surface processes (Auger de-excitations, e.g.) Bulk processes (ionization, e.g.)	Implantation Primary ions Surface atoms (recoil)
Photons Gas phase processes Surface processes Bulk processes	Lattice destruction Imperfections Amorphization
	Chemical effects Breaking of bonds Bond formation

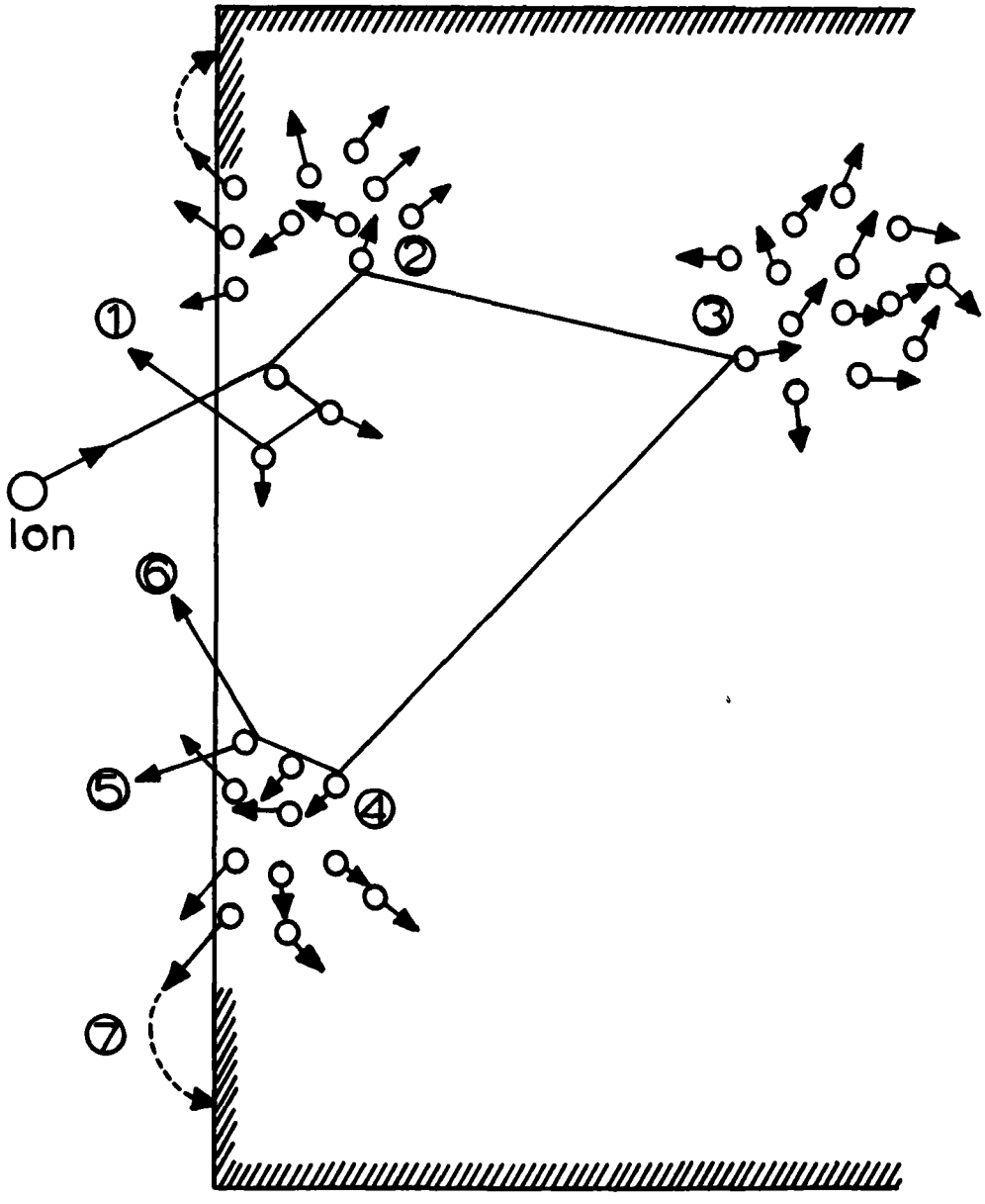


Figure 1. Schematic of Possible Collision Processes which Occur Under Ion Bombardment (Reference 8)

Surface analysis by SIMS falls into two categories; low current density sputtering and high current density sputtering. Categories are determined by the characteristics of the primary ion beam. A low current density sputtering analysis results in a very small fraction of the surface being disturbed, a result that approaches a basic requirement of a true surface analysis method. This is generally known as the static SIMS method (SSIMS). High current density sputtering removes a great deal of material, but is required for obtaining elemental depth profiles. In the high current density method, significant changes are seen in the surface and near surface regions. Table 2 (Benninghoven) shows the effect of ion impact on a solid surface including the emission process and changes in the surface zone. Figure 2 (Benninghoven) also shows schematically the induced changes in the surface zone of a solid due to ion bombardment and shows three different zones; an emission zone, an implantation zone, and a lattice destruction zone. These zones then are defined as A) a loss of surface atoms out of the emission zone as a consequence of emission of molecular and atomic particles and recoil implantation; B) implantation of primary ions and recoil surface atoms; C) changes in the lattice structure, as for example, creation of imperfections, amorphous states and so forth. In addition, other low energy processes, such as the breaking of chemical bonds and the formation of chemical bonds, are also caused by ion bombardment. The escape depth for sputtered particles varies greatly and is strongly dependent on the energy of the primary ion, the mass of the primary ion, and the mass of the atoms of the target. To determine whether a particle will leave the surface as a neutral species or as an ion is a complex, quantum mechanical problem involving ground and excited state interactions of the atom or molecule with the solid. Numerous workers (Werner (Reference 7), McHugh (Reference 9), Benninghoven (Reference 6)) have discussed possible mechanisms for emission of secondary ions. Joyes (Reference 10) has reviewed the theoretical mechanisms of secondary ion emission. For moderate energy sputter ion beams, a major contributor to the secondary ion yield is resonance and autoionization of excited species that emerge from the solid phase to vacuum. A less important contribution to the ion yield is resonance ionization of ground state species. An explanation by Schroeer (Reference 11) for the emission of positive ions from metals assumes that

TABLE 2

MAIN FEATURES OF SIMS AS A SURFACE ANALYSIS METHOD (REFERENCE 6)

Positive:	- Information depth in the "monolayer range"
	- Detection of all elements including hydrogen
	- Detection of chemical compounds
	- "Lateral resolution" in the range of atomic distances
	- Isotope separation
	- Extremely high sensitivity for many elements and compounds ($<10^{-6}$ monolayers)
	- Quantitative analysis after calibration
	- Negligible destruction of the surface (SSIMS)
	- Elemental Profiling (Dynamic SIMS)
Negative:	- Large differences in sensitivity for different "surface structures" (factor 1000)
	- Problems in quantitative interpretation of molecular spectra
	- Ion induced surface reactions

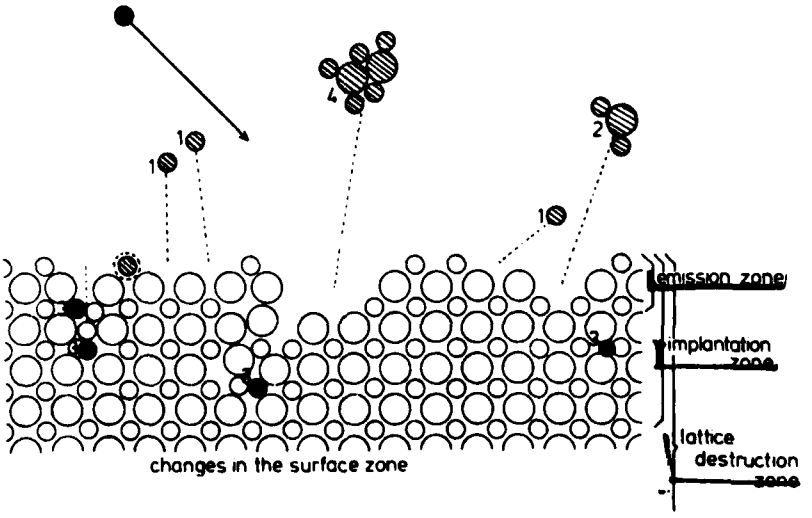


Figure 2. Induced Changes in the Surface Zone Due to Sputtering (Reference 6)

the sputtered particle leaves the surface as a neutral atom in the ground state and is ionized via transition of the atom electrons to the top of the conduction band in the metal.

Regardless of the exact mechanism and production, the SIMS method as a technique for surface analysis has several advantages as seen in Table 2 (Benninghoven). Of the positive attributes listed probably the extremely high sensitivity for many elements is the greatest advantage of SIMS. On the other hand, the extremely large differences in sensitivity for different surface structures is the largest negative factor involved in SIMS analysis. More specifically, the following comments on the SIMS technique were aired by Czanderna and co-workers (Reference 12) in a recent review.

1. DETECTION SENSITIVITY

The outstanding feature of SIMS is the detection sensitivity of 10^{-6} to 10^{-4} of a monolayer for surface analysis, depending on how fast the surface has sputtered away. Except for slight variations in the transmissivity of ions with different masses, there is no Z dependence on the detection sensitivity of a properly designed SIMS apparatus. Furthermore, the absence of an inherent background permits detection of trace amounts of 10^{-2} to 1 ppm atomic. As little as 10^{-18} grams of the sample species may be sufficient to provide a detectable signal. Thus, using care in the instrument and bombardment parameters, signals may be restricted to one to two monolayers.

2. ISOTOPIC IDENTIFICATION

Isotopic labeling of ions could be used for study of reaction mechanisms. Despite the apparent potential, the literature contains little mention of isotopic labeling in conjunction with SIMS analysis of the surface.

3. IDENTIFICATION OF HYDROGEN

The detectability of hydrogen by SIMS provides a routinely available capability not possible with other commercially available surface analysis equipment.

4. CHEMICAL IDENTIFICATION

The complex spectra presented provide an opportunity to unravel chemical information about surface compounds.

5. IN-DEPTH PROFILING

The ability to sputter surfaces rapidly and to maintain a constant monitor of the composition is one of the outstanding features of SIMS. As with any depth profiling process resolution at the interface is limited by the damage caused by sputtering rather than by the apparatus.

6. IMAGING

Ion microprobes provide capability to image the surface under investigation. Czanderna and co-workers also make some pertinent comments on limitations of the SIMS method. They point out that first and foremost SIMS requires destruction of the sample for analysis. There is no chance for a second look at the same spot on the sample. Secondly, the factors causing large variations in the production of secondary ions make routine quantification only a remote hope. Using standards and well-studied systems, quantitative SIMS to better than the 20% of the surface layers is possible, but the cost of extensive prior work may not be warranted. Finally, matrix effects, e.g., the variation in the signal of the same element in different chemical environments can alter the detectability of trace amounts by factors of 10^2 to 10^4.

SECTION III

EQUIPMENT

All SIMS experiments require a vacuum chamber to house the experiment, a sample holder, an ion source, an energy analyzer, and a mass analyzer as seen in Figure 3. Use of the characteristics of imaging instruments have been made by Socha (Reference 13) and fundamental concepts of both imaging and non-imaging instruments by McHugh (Reference 9). Most non-imaging instruments are generally called SIMS instruments. Imaging instruments are usually called ion microprobes. A schematic of a typical ion microprobe mass analyzer is shown later in the discussion of imaging. Usually such imaging instruments have vacuum capabilities in the very high vacuum region rather than in the UHV. Also used are high sputtering rates and ion voltages in the range of 10 kv or more. This is in contrast to new designs for SIMS using quadrupole mass analyzers where vacuum capabilities in the range of 10^{-10} Torr are possible. In the static SIMS method where very slow sputtering rates are used for analysis, the capabilities must be such that the recontamination rate for residual gases do not exceed the sputtering rate. SIMS instruments also vary according to the total pressure in the system. In most instruments the noble or reactive gas fills the system and the entire chamber, including the ion gun and sample area, are at approximately 1 to 5 x 10^{-5} Torr. Such an instrument is typified by the commercial equipment manufactured by the 3M Co. (3M Co., St. Paul, Minnesota). Another type of instrument is one in which the performance is improved through the use of a differentially pumped vacuum system to produce ultra high vacuum in the vicinity of the sample. This also allows the entry of a reactive gas in the sample chamber area while sputtering with a noble ion for studying chemical changes or reactions on the surface. An instrument of this type from the recent literature (Reference 15) is shown in Figure 4. Still another improvement made to the SIMS instruments is the mass analysis of the primary beam (Reference 16). Such an instrument design is shown in Figure 5. In addition to mass analyzing the primary beam is this instrument, beams less than 70 micrometers in diameter are used with current densities

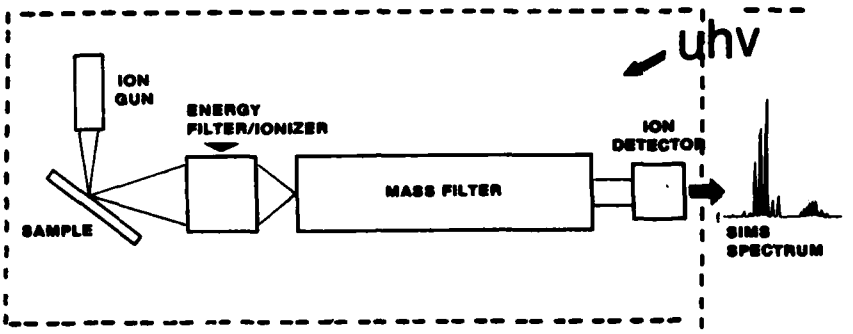


Figure 3. Major Components of a SIMS Experiment

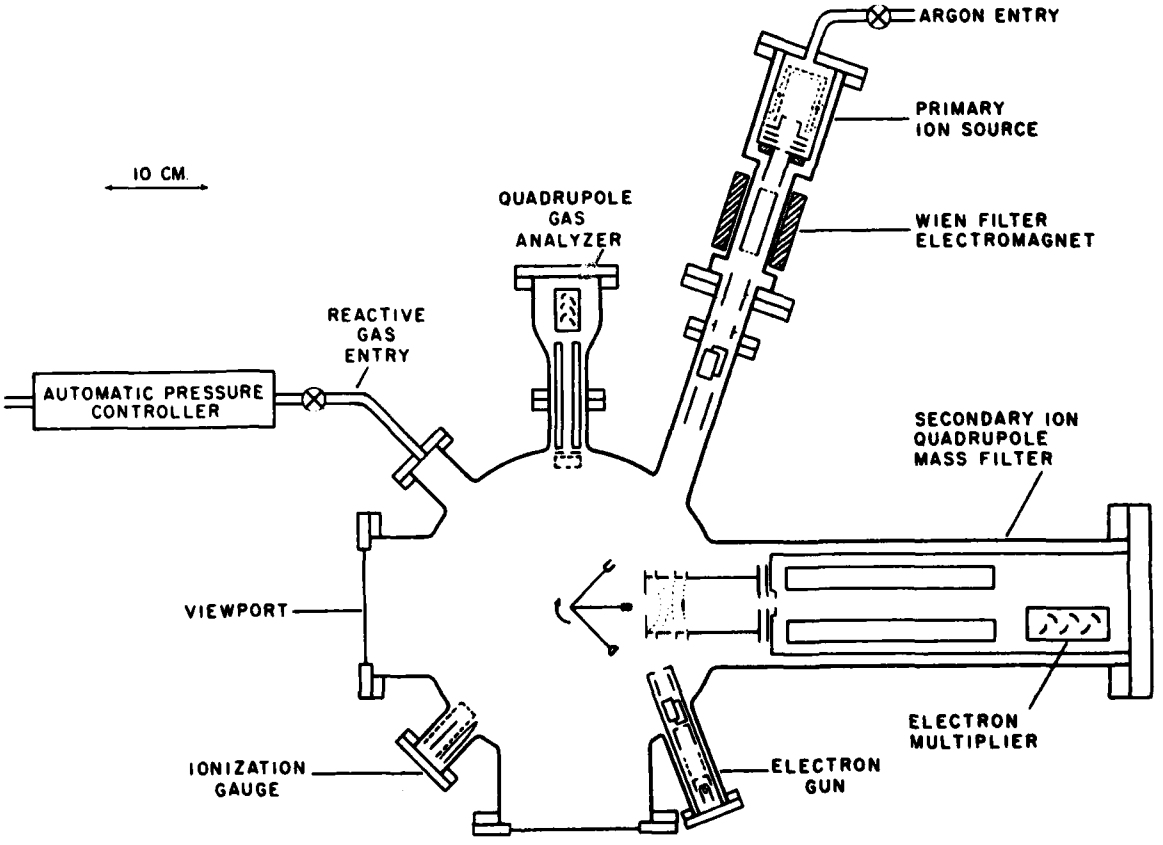


Figure 4. A General View of the Secondary Ion Mass Spectrometer System (Reference 15)

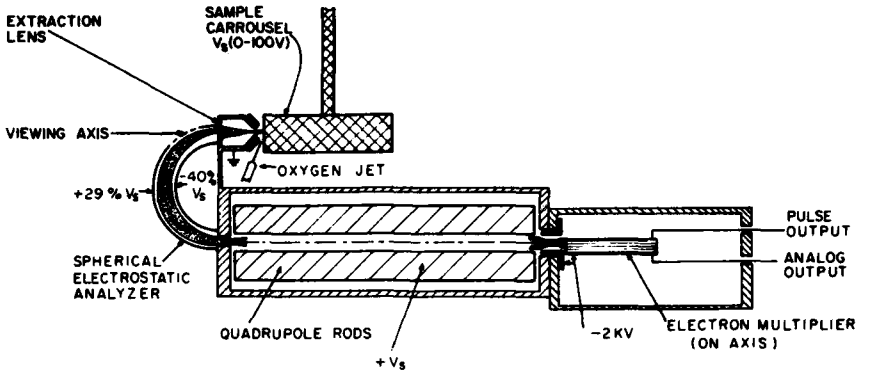


Figure 5. SIMS Apparatus Using a Spherical Electrostatic Analyzer (Reference 16)

greater than 25 milliamperes per square centimeter. Beam rastering and electronic signal gating make this instrument especially applicable to the production of high quality depth profiles. These authors point out that an ultra high vacuum system is an absolute necessity to reduce the adsorption of background gases on the sample surface during sputtering for in-depth profiling of carbon, oxygen, nitrogen, and especially hydrogen.

The energy filter is made up generally of several elements whose function is to optimize collection of the secondary ions, and to filter and focus the ions at the entrance to the mass analyzer. The energy analyzer as used by Dawson and Redhead is seen in Figure 6. The grid radii are chosen to increase the acceptance angle at the target and to produce a converging beam at the quadrupole mass analyzer entrance. An interesting design utilizing conically shaped elements was developed by Dowsett et al (Reference 17). Magee and co-workers (Reference 16) used a spherical electrostatic analyzer in front of the quadrupole elements to allow selection of specific areas in the crater and the use of an on-axis electron multiplier in the quadrupole mass analyzer. Much simpler designs also perform well, such as the two analyzers seen in Figure 7.

Secondary ions may be mass analyzed with virtually any kind of mass spectrometer. Most imaging instruments use double focusing mass spectrometers. The majority of modern secondary ion mass spectrometers for surface characterization use quadrupole mass filters. Some use a dual

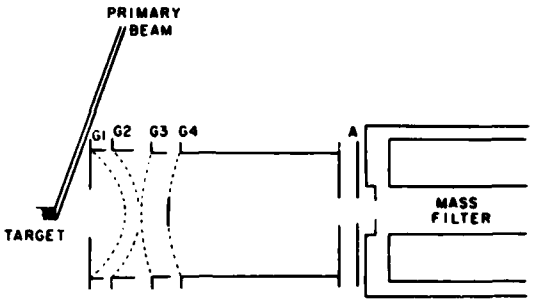


Figure 6. Detail Showing the Arrangement of the Energy Analyzer (Reference 17)

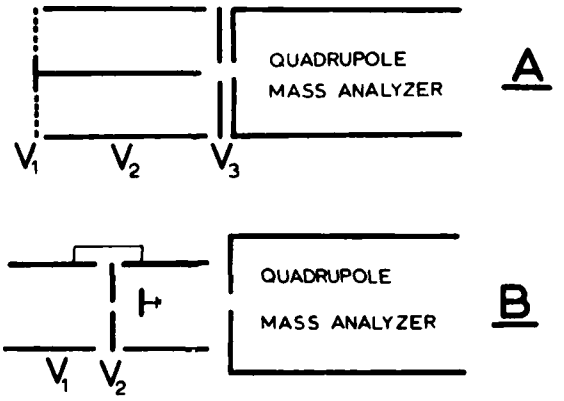


Figure 7. Simple Energy Analyzers

system in which a magnetic sector is used to separate the primary ions and a quadrupole is used to detect secondary ions as shown in Figure 8 (Reference 26).

The radio frequency quadrupole mass analyzer has a number of advantages for secondary ion mass spectroscopy. Among the inherent characteristics of the quadrupole filter are: A) Particle separation is on the basis of charge to mass ratio rather than on other properties, such as velocity or momentum; B) Axial energy acceptance is over a relatively wide range; and C) Transmission efficiency approaches 100% under certain operating conditions. One attractive aspect of the quadrupole is that only radio frequency fields are required making the analyzer relatively light and structurally compact compared to magnetic instruments. Operating design also allows very rapid spectrum scanning rates (orders of magnitude greater than most magnetic instruments). This allows a real-time oscilloscope display of SIMS data. In addition, the geometry of the quadrupole is such that only an external ionizer is needed to provide residual gas analysis (RGA) capability.

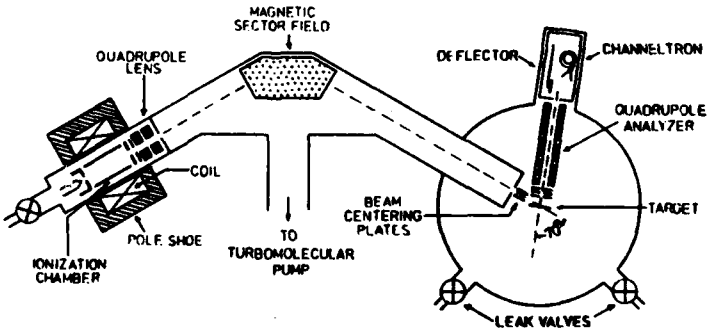


Figure 8. Magnetic Sector Design to Separate Primary Ions (Reference 26)

SECTION IV

SECONDARY ION MASS SPECTRA

Benninghoven (Reference 18) used a simple two-component lattice of metal and oxygen to answer the question "What types of ions will be emitted from a given surface structure?" During the sputtering process, particles of this lattice will be emitted from the surface, both as single atoms and as clusters. Plog, Wiedman, and Benninghoven (Reference 27) evaluated data from oxidized metals and established a formula which allows calculation of absolute yields of metal and oxygen ions. Benninghoven (Reference 18) makes the assumption that one condition of the formation of a cluster is that the cluster atoms are located on adjacent sites of the lattice before emission. It was printed out that in the case of a metal-oxygen lattice, we can expect particles of the composition Me_mO_n. This way a matrix of possible clusters was established. The formation probability of a particle cluster is a complicated function of many parameters, such as the charge state of an emitted ion. In principle, each fragment can be ejected as a positively or negatively charged ion or as a neutral particle. In the case of the metal oxygen surface structures, it has been learned from experimental results that for emitted particles there is a tendency for charge conservation related to the charge state in the lattice (Reference 18). Therefore, we should expect the preferential emission of positive metal ions Me^+ and negative oxygen ions O^- for a metal-oxygen structure. The yield of secondary molecular ions depends on the electronic properties of the molecular ion, particularly the dissociation energy of the complex. Joyes (Reference 10) has used semi-empirical quantum chemical calculations to explain a number of experimental observations relating to relative molecular ion yields. Instruments not using ultra high vacuum or instruments using reactive sputtering frequently show many more molecular ions than those in which noble gas ions are used in an ultra high vacuum system. Elements with many isotopes frequently combine to form extremely complicated spectra. Werner (Reference 7) points out that it is most advantageous for chemical analysis to work in a mode which preferably gives atomic ions; on the other hand, he says that for studies of chemical

bonding, polyatomic ions, which constitute the fingerprint spectrum of a given compound, can be used to advantage. Molecular ions may be discriminated from atomic ions because of the different energy distribution of the two groups. The energy spectrum of the distribution of Al_3^+ and Al^+ is much different, as shown by Herzog and co-workers (Reference 19). An illustration of their work using discrimination on initial energy distribution is shown in Figure 9. By setting an energy band, one can favorably increase the intensity of the atomic species, such as Al^+, with respect to the cluster ion, such as Al_3^+. On the other hand, the cluster ions can be used as a clue to the molecular species on the surface, and the method has been extended into the analysis and characterization of organic materials. This makes this technique invaluable for studying the adsorption characteristics of various surfaces to liquids and gaseous compounds. An example of a negative SIMS spectrum of adsorbed molecules is shown in Figure 10 (Reference 6).

More recent results have been shown and are summarized in Table 3 on a variety of materials such as vitamins, peptides, and amino acids (Reference 28). An example of positive and negative secondary ion spectra is shown for ascorbic acid in Figure 11.

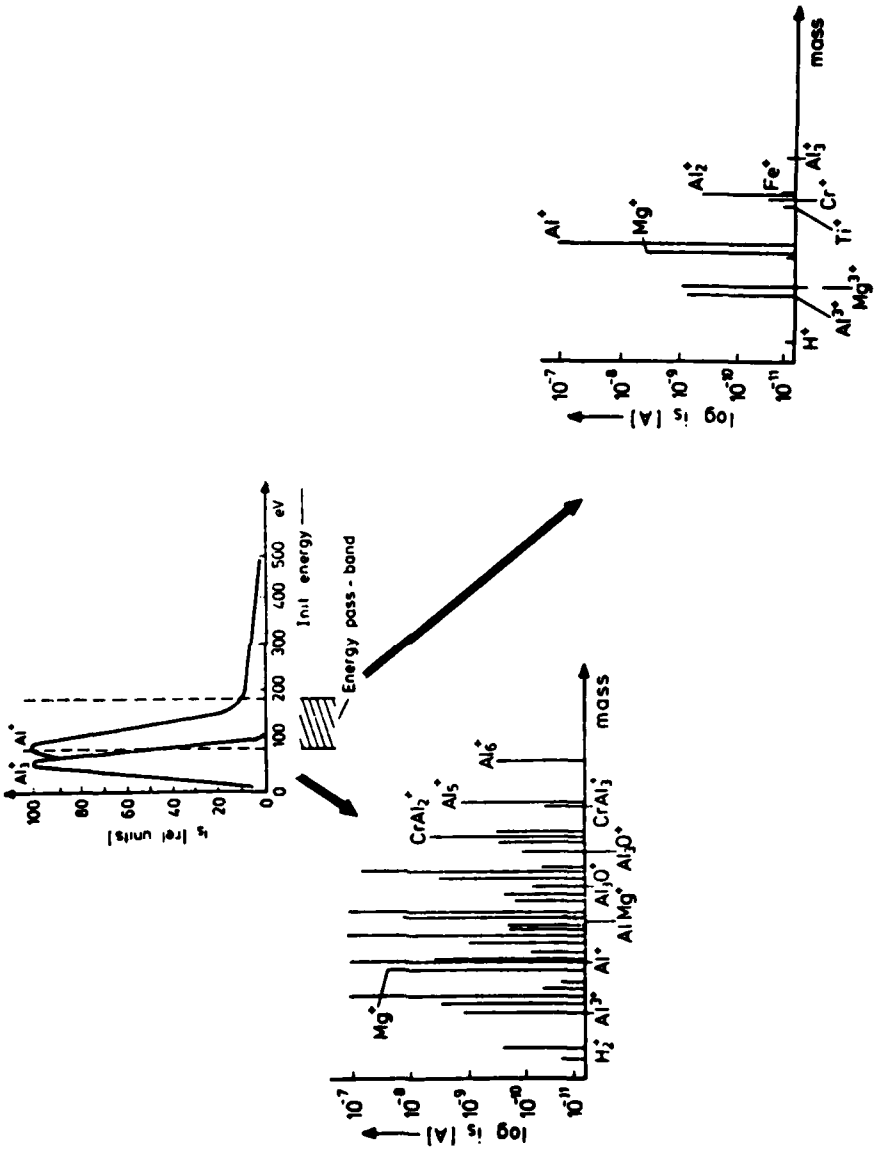
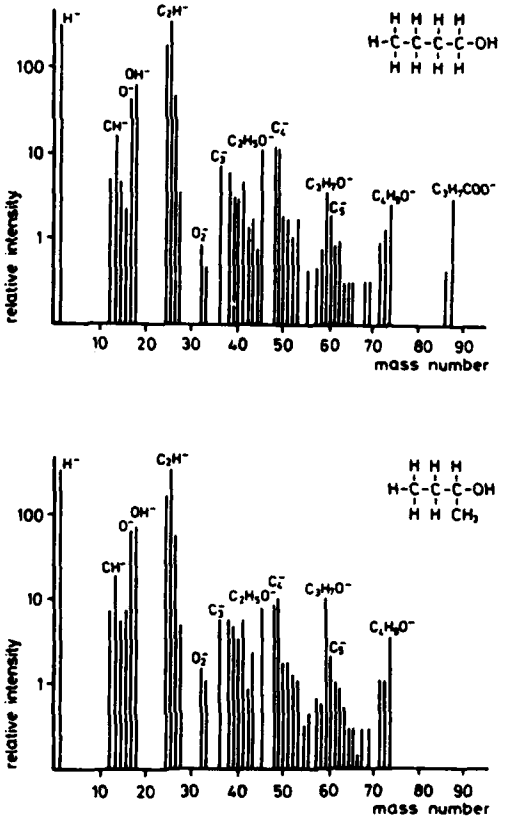


Figure 9. Energy Distribution of Secondary Ions and Spectra from Each Region (Reference 19)



Surface oxidation to the corresponding acid is possible only for the secondary alcohol (C_3H_7COO emission, upper spectrum)

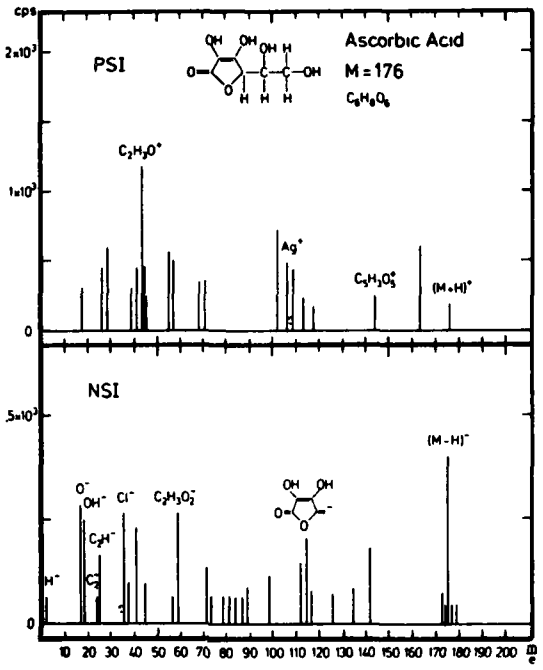
Figure 10. Secondary Ion Spectrum of Adsorbed Molecules: 1- & 2-Butanol on Molybdenum (Reference 6)

TABLE 3

ABSOLUTE YIELD OF "PARENT LIKE" SECONDARY IONS OF ORGANIC COMPOUNDS ON SILVER (REFERENCE 28)

	formula	mol wt	yield $S(X) \times 100$ L (Number of secondary ions x 100, per incident primary ion)		
I. amino acid			$(M + H)^+$	$(M - H)^-$	$(M - COOH)^+$
glycine	$C_2H_5NO_2$	75	120.0	-	52.0
α-alanine	$C_3H_7NO_2$	89	21.0	40.0	53.0
β-alanine	$C_3H_7NO_2$	89	88.0	19.5	7.2
phenylalanine	$C_9H_{11}NO_2$	165	4.0	0.3	13.0
serine	$C_3H_7NO_3$	105	61.0	18.0	61.0
threonine	$C_4H_9NO_3$	119	8.3	2.6	13.8
proline	$C_5H_9NO_2$	115	19.2	8.8	72.0
valine	$C_5H_{11}NO_2$	117	8.0	8.3	32.0
leucine	$C_6H_{13}NO_2$	131	0.8	26.4	40.0
norleucine	$C_6H_{13}NO_2$	131	24.8	6.5	76.0
arginine	$C_6H_{14}N_4O_2$	174	7.2	2.4	2.1
tyrosine	$C_9H_{11}NO_3$	181	7.4	-	13.6
tryptophan	$C_{11}H_{12}N_2O_2$	204	3.5	0.8	3.5
cysteine	$C_3H_7NO_2S$	121	12.0	11.0	15.0
cystine	$C_6H_{12}N_2O_4S_2$	240	4.0	1.6	1.8
methionine	$C_5H_{11}NO_2S$	149	13.1	5.4	9.4
ethionine	$C_6H_{13}NO_2S$	163	13.6	5.6	12.0
glutamine	$C_5H_{10}N_2O_3$	146	7.2	8.3	4.3
II. derivates of amino acids			$(M - H)^-$	$(M' - H)^-$ [a]	$(M - Cl)^+$
glycine ethylester HCL	$C_4H_{10}ClNO_2$	139	-	1.6	180.0
alanine ethylester HCL	$C_5H_{12}ClNO_2$	153	-	-	48.0
cysteinium HCL	$C_3H_8ClNO_2S$	157	-	4.0	19.7[b]
taurine	$C_2H_7NO_3S$	125	4.8	-	-
III. peptides			$(M + H)^+$	$(M - H)^-$	$(M - COOH)^+$
glycylglycine	$C_4H_8N_2O_3$	132	41.6	4.8	-
glycylglycylglycine	$C_6H_{11}N_3O_4$	189	4.0	0.4	2.0
glycylleucine	$C_8H_{16}N_2O_3$	188	1.6	4.2	3.0
phenylalanylglycine	$C_{11}H_{14}N_2O_3$	222	8.0	1.6	-
IV. drugs			$(M + H)^+$	$(M - H)^-$	$(M - OH)^+$
barbital	$C_8H_{12}N_2O_3$	184	-	44.0	-
ephedrine	$C_{10}H_{15}NO$	165	16.0	-	40.0
atropine	$C_{17}H_{23}NO_3$	289	84.8[c]	-	-
epinephrine	$C_9H_{13}NO_3$	183	-	6.4	-
V. vitamins			$(M + H)^+$	$(M - H)^-$	
ascorbic acid (C)	$C_6H_8O_6$	176	3.7	17.6	
biotin (H)	$C_{10}H_{16}N_2O_3S$	244	0.3	4.2	
nicotinic acid (PP)	$C_6H_5NO_2$	123	-	46.4	
nicotinamide	$C_6H_6N_2O$	122	2.1	15.2[d]	
VI. sulfonamides			$(M + H)^+$	$(M - H)^-$	
sulfanilic acid	$C_6H_7NO_3S$	173	-	16.3	
sulfanilamide	$C_6H_8N_2O_2S$	172	0.6	17.6	
sulfacetamide	$C_8H_{10}N_2O_3S$	214	-	20.8	
VII. other compounds			$(M + H)^+$	$(M - H)^-$	
thymidine	$C_{10}H_{14}N_2O_5$	242	1.9	1.3	
acriflavine	$C_{14}H_{14}ClN_3$	259	-	-	96.0[e]
creatine	$C_4H_9N_3O_2$	131	2.9	-	3.4[f]
creatinine	$C_4H_7N_3O$	113	16.0	6.0	6.0[g]

[a] M' = mass of related amino acid. [b] Identical with $(M' + H)^+$. [c] M^+. [d] M^-. [e] $(M - Cl)^+$. [f] $(M + H - H_2O)^+$. [g] $(M + H + H_2O)^+$.



Positive and negative secondary ion spectra of ascorbic acid.

Figure 11. SIMS Data from Ascorbic Acid (Reference 28)

SECTION V

SECONDARY ION YIELD

Unknown or rapidly changing secondary ion yields are the major problem confronting the SIMS technique. Factors influencing secondary ion yield are the complex electronic and chemical properties of the surface along with certain characteristics of the matrix, and the concentration of the active species. The absolute secondary ion yields for certain elements, such as aluminum, chromium, and vanadium may change by as much as a factor of 10^3 from a clean metal condition to a fully oxidized surface (Reference 20). In addition, according to McHugh (Reference 9), the relative ion yields for different elements in the same matrix can exceed 10^4, and in single crystals the secondary ion yield can vary with crystal orientation. Ion channeling phenomenon in single crystals can also complicate this situation. Ion yield can vary greatly with the impinging ion. Of course, it has been shown that sputtering yield of ions and neutrals is dependent on the mass and the energy of the primary ion beam. Evidence of this is shown in Figure 12 from the work of Winters (Reference 8), where the sputtering yield for copper is calculated and compared with experimental data for neon on copper, argon on copper, and xenon on copper. The increase in sputtering yield is seen with an increase in mass of the primary ion. There is also a very large influence on the sputtering yield with the angle of incidence, as shown in Figure 13, for argon ions on polycrystalline copper (Reference 8). Yields are also greatly influenced by the reactivity of gas making up the primary ion beam. This is shown in Figure 14 (Socha, Figure 7) where the yield of Al^+ is shown as a function of time using argon and oxygen. In the case of argon, there is a very fast rising spike in the yield which corresponds to the natural oxide on aluminum. The yield drops off rapidly as the natural oxide film is removed. Bombardment with oxygen, on the other hand, shows the same rapid rise, and then reaches an equilibrium sputtering rate which continues because of the reactivity of the oxygen ion beam. This method of increasing ion yields has been used by sputtering with noble gas ions onto a surface in which a very small jet of oxygen or other reactive gas is directed. This allows the

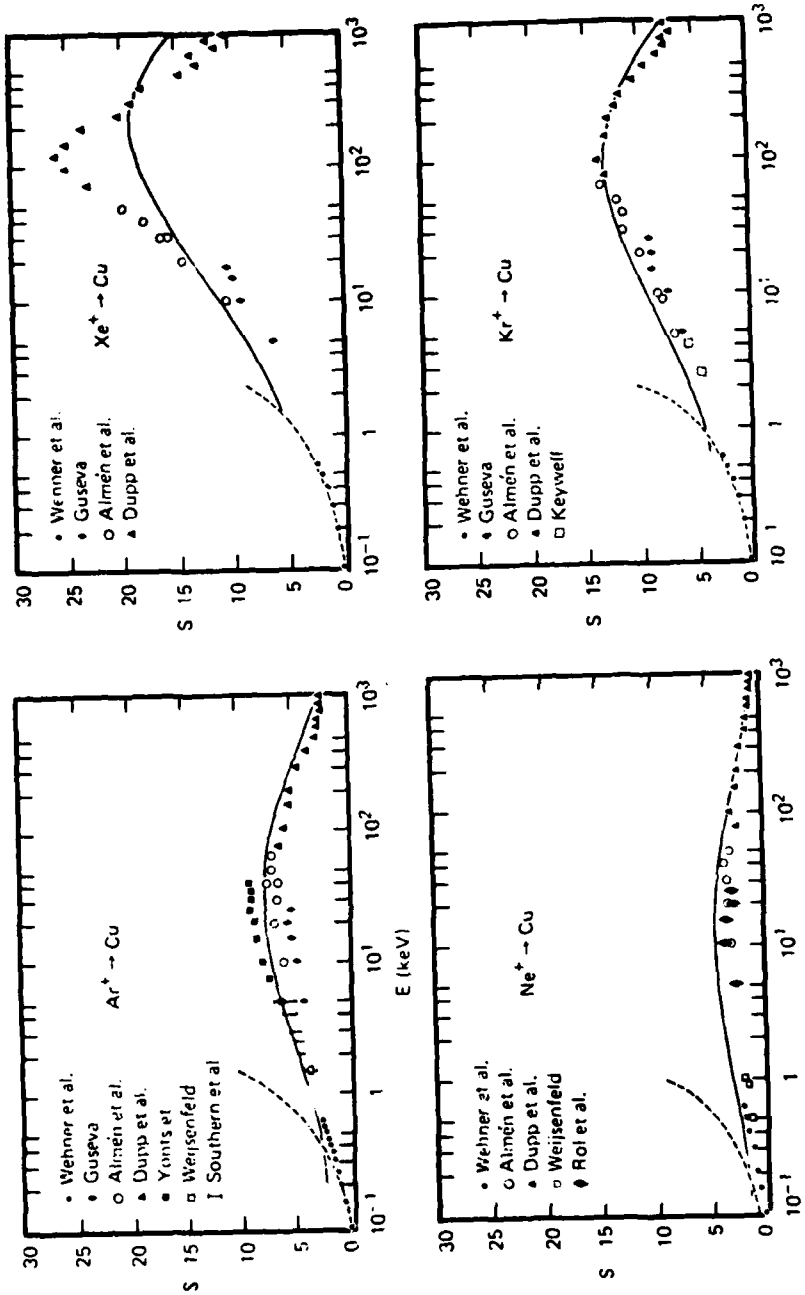


Figure 12. Sputtering Yields for Copper (Reference 8)

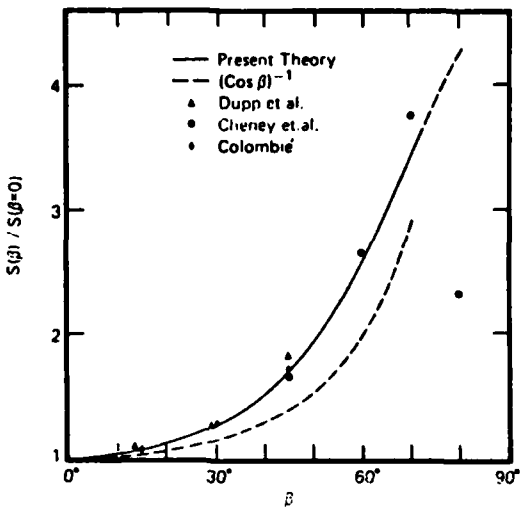


Figure 13. Variation of Sputtering Yield with Angle of Incidence for Ar^+ Ions on Polycrystalline Copper

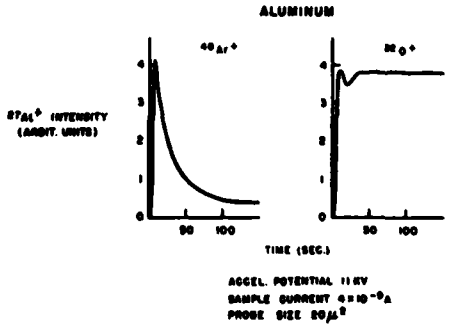


Figure 14. Al^+ Yield Using Argon and Oxygen Ions (Reference 13)

use of noble gas ion sputtering for which the sputtering rates are well known and yet has the advantage of keeping sputtering rates constant. One must remember either when sputtering with reactive gases or when adding a reactive gas to increase the yield that the surface chemistry is being changed, and that the true surface characterization of the original surface is not being obtained. However, for certain purposes such as producing sharp in-depth profile analysis which are not subject to yield changes, such a technique must be employed. Many authors have shown tables of data in which the secondary ion yield of positive and negative species and of clean metals and pure oxides have been determined. Such data is seen in Tables 4 and 5. Generally, these tables give approximate values but the yields are so dependent on aspects such as the partial pressure of reactive and unreactive gases in a system that probably standards must be run in a particular system to obtain even secondary standard samples. Yield data for Ar^+ and Xe^+ at higher voltage (8 KV) are shown in Table 6 (Reference 13). Despite the fact that absolute values of ion yield may not be the same as measured in another system, it is extremely useful to have even semi-quantitative data available. Numerous measurements have been made on the yield of both clean and oxide covered surfaces. Yields have also been measured with both noble gas and reactive gas sputtering. In the earlier and following tables, yields for both clean and oxide covered surfaces for both positive and negative species are shown taken primarily from the work of Werner (Reference 7) and of Benninghoven (Reference 6). In addition, measurement of Benninghoven (Reference 27) on the yields of the secondary ions of the species MeO_n^+ is given for 15 oxidized elements. Also, calculated values are shown of the lowest detectable concentration for several elements assuming a primary ion beam current of 10^{-8} ampere. The energy dependence of the secondary ion yield is seen in Figure 15 from work of Wittmaack (Reference 3). Calculations by Werner (Reference 7) show the relation between ion current erosion rate, thickness of the removed layer, and the minimum detectable limit in Table 10.

TABLE 4

RELATIVE YIELDS OF SOME ELEMENTS FOR THE FORMATION OF NEGATIVE IONS, S^-_{rel}, OF POSITIVE IONS, S^+_{rel}, AND THE RATIO S^-_{rel}/S^+_{rel} (REFERENCE 29)

	Al	Fe	Ge	Zr	Cu	Pt	Ag	Pb	Au
S^-_{rel}	4.4	[1]	12	1	6.6	1.4	2.4	0.2	7.4
S^+_{rel}	15.4	[1]	0.9	0.6	0.35	0.13	0.05 (0.5)	0.04	0.02
S^-_{rel}/S^+_{rel}	0.29	[1]	13.3	1.6	19	10	4.8(48)	5.5	370

* reference element: Iron

TABLE 5

POSITIVE ION YIELDS FOR CLEAN METAL AND OXIDE SURFACE (REFERENCE 7)

ELEMENT	S^+clean	α^+	S^+oxide	α^+	S^+oxide/S^+clean
Mg	8.5×10^{-3}	4×10^{-3}	1.6×10^{-1}	8×10^{-2}	20
Al	2×10^{-2}	1×10^{-2}	2	1	100
V	1.3×10^{-3}	7×10^{-4}	1.2	6×10^{-1}	10^3
Cr	5×10^{-3}	3×10^{-3}	1.2	6×10^{-1}	200
Fe	1×10^{-3}	5×10^{-4}	3.8×10^{-1}	2×10^{-1}	380
Ni	3×10^{-3}	2×10^{-4}	2×10^{-2}	1×10^{-2}	7
Cu	1.3×10^{-4}	7×10^{-5}	4.5×10^{-3}	2×10^{-3}	30
Sr	2×10^{-4}	1×10^{-4}	1.3×10^{-1}	7×10^{-2}	700

TABLE 6

ION YIELDS FOR SOME PURE ELEMENTS OBTAINED BY USING XENON AND ARGON PRIMARY IONS (REFERENCE 13)

	8 kV Xe	8kV Ar
Mg	20.9	107
Al	7.2	790
Fe	4.2	22.6
Co	1.5	3.2
Ni	1.68	1.8
Cu	0.79	2.4
Zn	0.95	3.2
Zr	0.56	3.0
Nb	0.09	3.7
Ag	0.01	0.94
Cd	0.38	0.11
In	1.67	5.0
Sn	0.72	
Ta	1	1
Au	0.006	0.008
Pb	3.0	4.2

SOCHA

TABLE 7

ABSOLUTE SECONDARY ION YIELDS $S(Me^+)$ FOR CLEAN AND OXYGEN COVERED SURFACES (REFERENCE 7)

Metal	$S(Me^+)$ Clean surface	$S(Me^+)$ oxygen covered surface
Mg	0.01	0.9
Al	0.007	0.7
Ti	0.0013	0.4
V	0.001	0.3
Cr	0.0012	1.2
Mn	0.0006	0.3
Fe	0.0015	0.35
Ni	0.0006	0.045
Cu	0.0003	0.007
Sr	0.0002	0.16
Nb	0.0006	0.05
Mo	0.00065	0.4
Ba	0.0002	0.03
Ta	0.00007	0.02
W	0.00009	0.035
Si	0.0084	0.58
Ge	0.0044	0.02

TABLE 8

YIELDS OF THE OXIDE-SPECIFIC SECONDARY IONS $MeO_n^{\pm}$ FOR 15 OXIDIZED METAL SURFACES (REFERENCE 27)

Metal	Ref.	Me^+	MeO^+	MeO_2^+	MeO^-	MeO_2^-	MeO_3^-	MeO_4^-
Mg	[24]	9.0×10^{-1}	1.5×10^{-3}	(a)	1.0×10^{-2}	2.5×10^{-3}	(a)	(a)
Al	[17,27]	7.0×10^{-1}	6.0×10^{-4}	(a)	2.0×10^{-2}	2.0×10^{-2}	(a)	(a)
Ti	[25]	4.0×10^{-1}	5.0×10^{-1}	7.0×10^{-3}	(a)	8.0×10^{-3}	1.8×10^{-2}	(a)
V	[21]	3.0×10^{-1}	6.0×10^{-1}	1.0×10^{-2}	1.0×10^{-4}	2.0×10^{-2}	1.0×10^{-2}	1.0×10^{-4}
Cr	[19,20]	1.2×10^{0}	2.0×10^{-1}	2.5×10^{-3}	2.5×10^{-4}	1.8×10^{-2}	7.0×10^{-2}	6.0×10^{-3}
Mn	[27]	3.0×10^{-1}	7.0×10^{-3}	(a)	4.0×10^{-3}	3.0×10^{-2}	4.0×10^{-3}	(a)
Fe	[18,26]	3.5×10^{-1}	1.4×10^{-2}	(a)	7.0×10^{-4}	8.5×10^{-3}	3.5×10^{-3}	(a)
Ni	[25]	4.5×10^{-2}	(a)	(a)	7.0×10^{-3}	6.0×10^{-2}	(a)	(a)
Cu	[25]	7.0×10^{-3}	(a)	(a)	1.5×10^{-3}	1.5×10^{-2}	(a)	(a)
Sr	[24]	1.6×10^{-1}	3.5×10^{-2}	(a)	1.3×10^{-2}	6.0×10^{-3}	(a)	(a)
Nb	[21]	5.0×10^{-2}	3.0×10^{-1}	6.0×10^{-2}	(a)	8.0×10^{-4}	2.0×10^{-2}	(a)
Mo	[27]	4.0×10^{-1}	3.0×10^{-1}	1.7×10^{-2}	(a)	1.4×10^{-3}	8.5×10^{-2}	1.4×10^{-2}
Ba	[24]	3.0×10^{-2}	1.7×10^{-2}	(a)	9.0×10^{-4}	7.0×10^{-3}	(a)	(a)
Ta	[21]	2.0×10^{-3}	2.0×10^{-2}	5.0×10^{-3}	(a)	1.0×10^{-3}	8.0×10^{-3}	2.0×10^{-4}
W	[22,23,27]	3.5×10^{-2}	1.5×10^{-1}	1.2×10^{-2}	(a)	1.2×10^{-3}	1.3×10^{-1}	1.0×10^{-2}

[a] Yield does not reach the experimental detection limit of 5×10^{-5}

TABLE 9

CALCULATED VALUES OF THE LOWEST DETECTABLE CONCENTRATION FOR SOME ELEMENTS (REFERENCE 7)

Elements	S^+	C_{min} (ppma)
Cu	1.3×10^{-4}	150
Ni	3×10^{-3}	7
Al	2×10^{-2}	1
Oxides	S^+	C_{min} (ppma)
Cu	4.5×10^{-3}	5
Ni	2×10^{-2}	1
Al	2	0.01

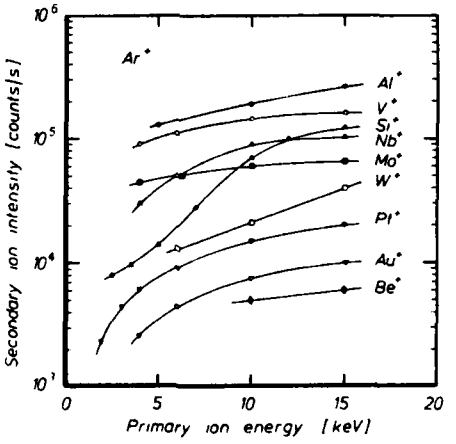


Figure 15. Secondary Ion Intensity Y^+ versus Primary Ion Energy (Normalized to a Beam Current of 1μA) (Reference 30)

TABLE 10

RELATION BETWEEN PRIMARY ION CURRENT, EROSION RATE, THICKNESS OF REMOVED LAYER AND MINIMUM DETECTABLE CONCENTRATION (REFERENCE 7)

$c_{min} \sim 1/(zA_b)$

Primary Ion i_p(A)	Erosion Rate z(A s^{-1})	Thickness of Removed Layer in t_a = 200 s	c_{min} (ppma)
10^{-8}	2	400 A	10
10^{-7}	20	4000 A	1
10^{-6}	200	4 µm	0.1
Bombarded area A_b:100 µm (10^{-4} cm^2)			
Concl. simultaneous multi-element detection → Photoplate or multi-collector (electr detection) Statistical fluctuations ~ (sputtered volume)$^{-1}$			

In the SIMS technique using the ion microprobe large amounts of material are sputtered away. In SIMS experiments with standard commercial UHV instruments, less material is sputtered but still there is a good deal of disturbance of the surface. However, if we want to investigate a surface reaction on a solid without any disturbance of the reaction itself by the ion bombardment, we must choose a lifetime of the monolayer surface which is long compared with the time of ion bombardment. Therefore, the primary ion current density has to be lower and in order to compensate for this we have to bombard a large area. This technique in which the average lifetime of a single monolayer is in the order of hours, is called the static method of secondary ion mass spectroscopy (SSIMS). Benninghoven (Reference 6) reports that the detection limit of a given component in a single monolayer is between 10 and 0.01 parts per million of one monolayer.

Most SIMS instruments using quadrupole mass analyzers have at least one mass unit resolution up to mass 300 or so. This resolution is adequate for many purposes; however, if it is required to resolve some analytical ions from interfering polyatomic ions, then much higher resolution is required as shown in Table 11. (Werner (Reference 7) from unpublished data of Evans.)

TABLE 11

TYPES OF INTERFERENCES AND TYPICAL EXAMPLES (REFERENCE 7)

Interference type	Interfering ion	Analyt. ion	Required resolution
Multiply charged matrix ion	$^{28}Si^{2+}$	$^{14}N^{+}$	950
	$^{62}Ni^{2+}$	$^{31}P^{+}$	3200
Matrix selfpolymers ions	$^{16}O_2^{+}$	$^{32}S^{+}$	1800
	$^{28}Si_2^{+}$	$^{56}Fe^{+}$	2950
Prim. ion-matrix molecular ions	Cu_3O^{+}	$^{207}Pb^{+}$	1050
	Si_2O^{+}	$^{75}As^{+}$	3250
	AlO_2^{+}	$^{59}Co^{+}$	1500
Hydride ions	$^{30}SiH^{+}$	$^{31}P^{+}$	4000
	FeH^{+}	$^{55}Mn^{+}$	3300
	SnH^{+}	$^{121}Sb^{+}$	19500
Hydrocarbon ions	$C_2H_3^{+}$	$^{27}Al^{+}$	650
	$C_5H_3^{+}$	$^{63}Cu^{+}$	650
	C_2H_2	CN	2000

SECTION VI

ELEMENTAL PROFILING

In-depth elemental profiling has the ability to sputter the surface and maintain a constant monitor of the composition with depth. Such in-depth profiling may also be accomplished by ISS, AES, and PES using sputtering techniques and with other techniques such as Rutherford backscattering in which sputtering methods are not used. In addition to the use of SIMS for elemental depth profiling going into the air solid interface that method is also extremely useful for profiling through solid-solid interfaces which may be far below the surface. A great improvement in elemental depth profiling using SIMS is obtained when the ion beam is rastered generally into a square pattern and the signal is only accepted over a portion of the flat bottomed crater. This raster gate technique is diagramatically shown in Figure 16 from work of Magee et al (Reference 16). Another method of profiling with depth is to use a high intensity static beam to sputter a deep crater into a material. Then the beam is focused to a smaller size and the beam moved across the edge of the crater or the sample moved under the beam. This method allows for numerous repeat measurements of different areas around the crater, as compared to the finite length of time possible during dynamic sputtering and monitoring of a given element.

The ideal true profile is rectangular shaped with the measured profile represented by an integrated error function. The interface with delta t (in terms of sputtering time t) or delta z (in terms of depth z) is arbitrarily defined as the interval where the density drops from 84% to 16% of maximum signal, equivalent to two standard deviations (two sigma of the error curve). Alternative definitions found in the literature are based on the 90%/10% or the 95%/5% interval corresponding with 2.56 sigma or 3.29 sigma, respectively. In depth profiling, the desired quantity is concentration which is a function of depth z and must be derived from the measured intensity. Honig and Magee (Reference 23) point out that there are numerous factors which contribute to an increasing width of the interface (Reference 23), when profiling with ions. They

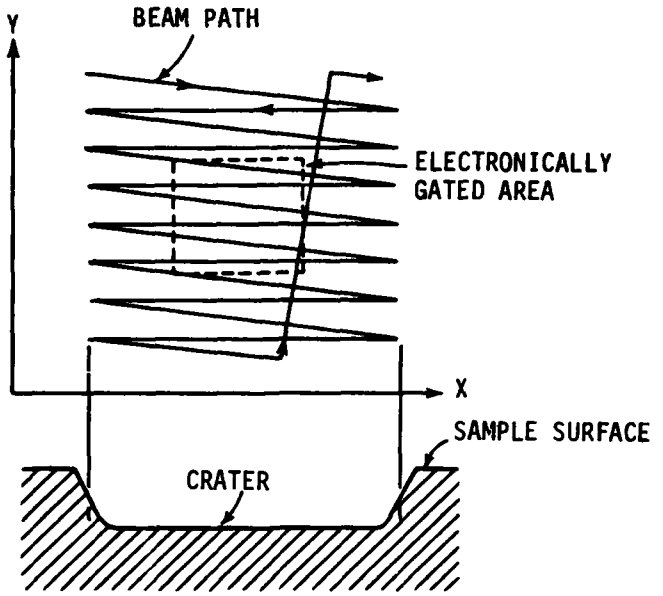


Figure 16. Raster/Gating Technique for Elemental Profiling (Reference 23)

list the following factors which influence the interface with the greatest degree: 1) Instrumental (inhomogeneities and fluctuating primary beam and so forth), 2) Initial Surface Roughness (imperfection, crystal orientation and so forth), 3) Information Depth, 4) Ion Mixing Effect and Lattice Damage, 5) Basic Sputtering Process (statistical considerations), 6) Preferential Sputtering (surface enrichment), 7) Atomic Migration, and 8) Chemical Reaction. An example of one broadening source is shown in Figure 20, where the AES depth profile of nickel and chromium in a multilayer sandwich structure is shown from a smooth surface and from a rough surface. The interfacial broadening of the rough surface is seen in The AES depth profile in Figure 20.

A serious problem encountered in SIMS analysis is that of specimen charging. Impact of energetic positive ions causes development of a positive charge on the surface of the insulator. This charge will influence or even prevent the emission of secondary ions. To overcome this charging of insulators there have been numerous methods used, as seen in Table 12. Some of these have significant limitations or

TABLE 12

METHODS OF CHANGE NEUTRALIZATION (REFERENCE 7)

(1) Deposition of a conducting thin film or of a grid.

(2) Use of Cs^+ as primary ions, in this way a conducting layer is continuously built up by the primary ion bombardment.

(3) Compensation of the charging by means of an extra electron beam.

(4) Use of neutral beams: the charging is reduced from the case of positive primary ions, see equation (8), to: $\Delta V_n = ri_s$ as the neutral beam does not bring any charge to the surface.

(5) Application of special electrodes for draining excessive negative charge.

(6) Shift of target holder potential V_H by ΔV in a direction opposite to the previous charging of the insulator.

contaminate the surface by coating a conductor on the surface of the insulator. In the mechanism of the charging of the insulator surface the impact of the positive ions cause secondary electron emission and consequently positive charge buildup. The obvious way of removing this charge is then to flood the surface with a beam of low energy electrons restoring charge neutrality. This method of charge compensation by electron bombardment is shown from work of Muller (Reference 22) in Figure 17. Muller's method has the advantage that deflecting the electron beam means that the surface of the sample cannot see the hot electron source and therefore cannot be contaminated by material boiled from the electron source. Since there is no direct line of sight, there is little heating caused by electrons from the filament. An example of SIMS spectra in the high mass range from an insulator when using the charge compensation method of Muller, is seen in Figure 18. Here strong, sharp symmetrical peaks are observed well out into the mass 300 range from the polymer Teflon.

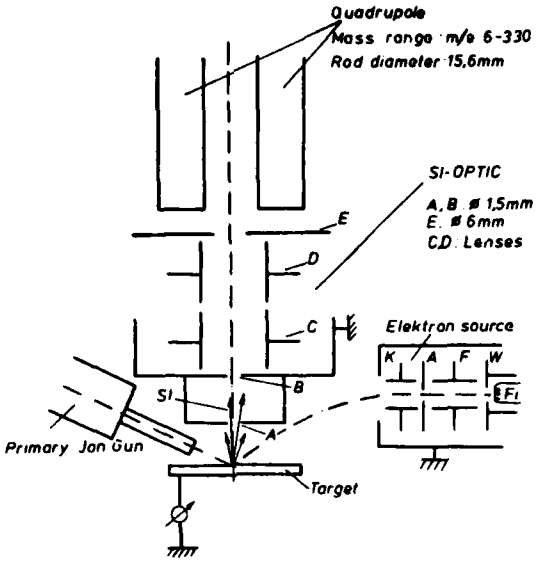
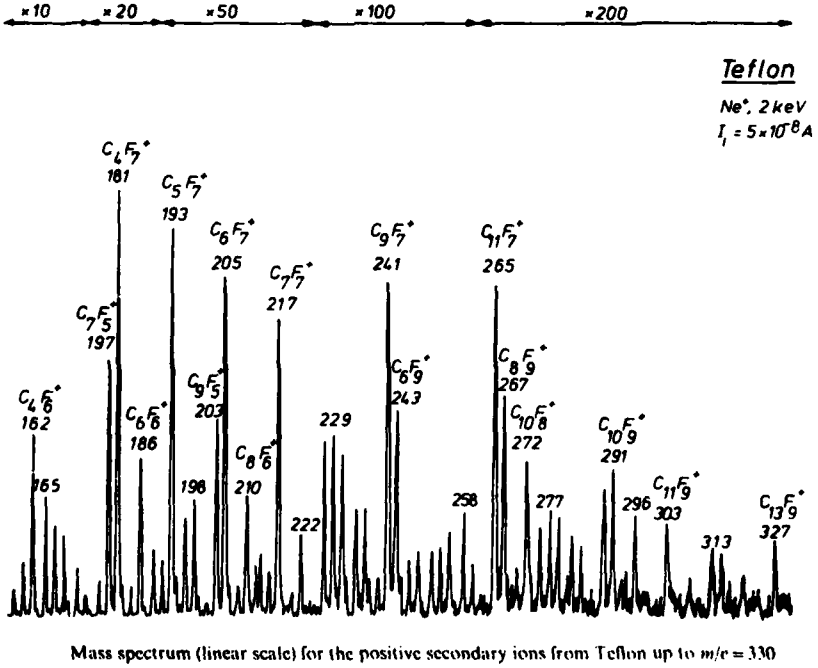


Figure 17. Charge Compensation in a SIMS Instrument (Reference 22)



Mass spectrum (linear scale) for the positive secondary ions from Teflon up to $m/e = 330$

Figure 18. SIMS Spectrum in Mass Range 160-330 from Teflon Using Charge Neutralization (Reference 22)

The quality of the depth profile (called the depth resolution) is best described in terms of the measured width of an interface between two layers, and is represented in Figure 19. Major limitations, as seen by Honig and Magee (Reference 23), of depth profiling along with their remedies for these limitations are shown in Table 13.

1. IMAGING

Secondary ion images that provide a two-dimensional elemental characterization of the surface can be produced either by the scanning microprobe method or by the direct ion imaging method. The method of the scanning microprobe is directly analogous to the methods used in the electron microprobe. In this case, a small ion beam is scanned across the surface and the secondary ions are recorded. The spot is rastered along the surface of the sample and synchronized with a cathode ray tube (CRT), such that an ion image may be developed on the CRT. Major components for an ion microprobe mass analyzer are shown in Figure 21. Another method of producing an image could more properly be called an ion microscope. This is an instrument which combines a mass spectrometer with an ion imaging microscope. The instrument forms a surface distribution map of the elements sputtered away from the surface of the specimen. An instrument of this type is seen in Figure 22. Here an electrostatic immersion lens is used to extract the secondary ion beam and to direct it to a special mass spectrometer which has both radial transverse focusing properties. The mass spectrometer portion separates the masses so that a given atomic mass may be selected. The ion beam passes through the magnetic field's electrostatic mirror which reflects the beam back through the magnet to the exit slits. The ion beam, however, is preserved as an ion image which is then projected on an image converter which produces an equivalent electron image. This image may be displayed on a fluorescent screen for direct viewing or photographed in the same manner as with an electron microscope. The screen may also be removed and direct electronic readout may be obtained using a scintillator system.

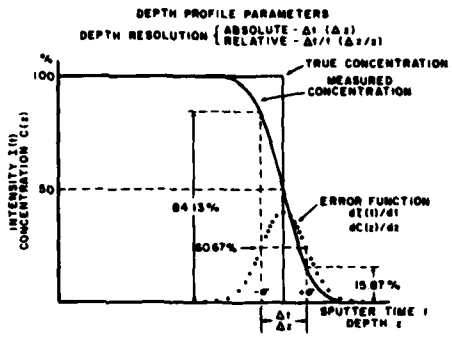


Figure 19. Depth Profile Parameters (Reference 23)

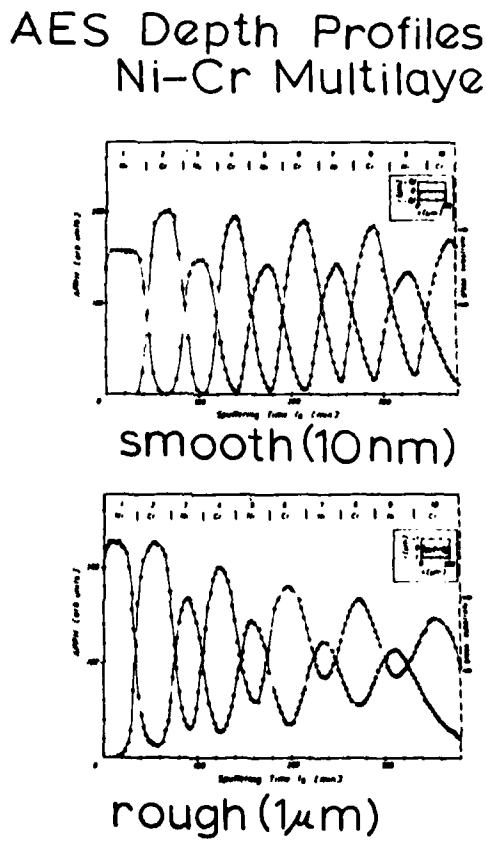


Figure 20. Influence of Roughness on Elemental Depth Profile Width and Resolution (Reference 23)

TABLE 13

LIMITATIONS AND REMEDIES IN DEPTH PROFILING (REFERENCE 23)

MAJOR LIMITATION	REMEDY
• CONVERTING SPUTTERING TIME t INTO DEPTH z ESPECIALLY AT INTERFACE	• MATCH FILM TO SUBSTRATE (SIMILAR YIELDS Y, RATES ż)
• CONVERTING MEASURED INTENSITY I INTO TRUE CONCENTRATION C	• SIMS: OXYGEN-FREE SYSTEM, OR SATURATE WITH O_2
• MICROSTRUCTURE AND CONE FORMATION	• OPTICALLY FLAT SUBSTRATE • AMORPHOUS LAYERS, IF POSSIBLE • APPROPRIATE ION SPECIES (N_2^+ OR O_2^+)
• PREFERENTIAL SPUTTERING WITH SURFACE ENRICHMENT	• SIMS RATHER THAN AES OR XPS
• EXCESSIVE INFORMATION DEPTH	• AES, XPS: CHOOSE LINE CLOSE TO MINIMUM
• LATTICE DAMAGE	• SIMS: USE LOWEST FEASIBLE ION ENERGY
• CHEMICAL EFFECTS (REDUCTION OF OXIDES)	• XPS: USE MINIMUM ION ENERGY, MOST SUITABLE ION SPECIES
• MOBILE SPECIES IN INSULATING MATRIX (e.g. Na/SiO_2)	• CHARGE NEUTRALIZATION: BY SEPARATE ELECTRON BEAM OR ELECTRODE, OR CHOICE OF SAMPLE ANGLE

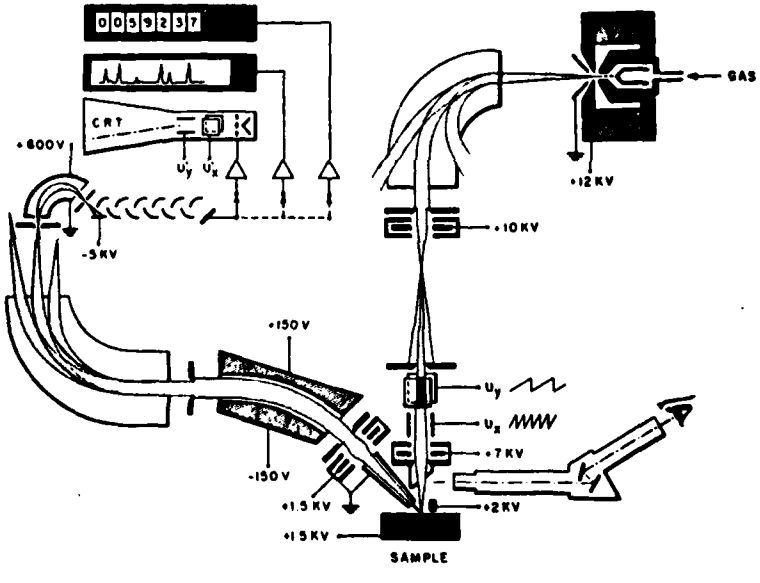


Figure 21. Components of an Ion Microprobe

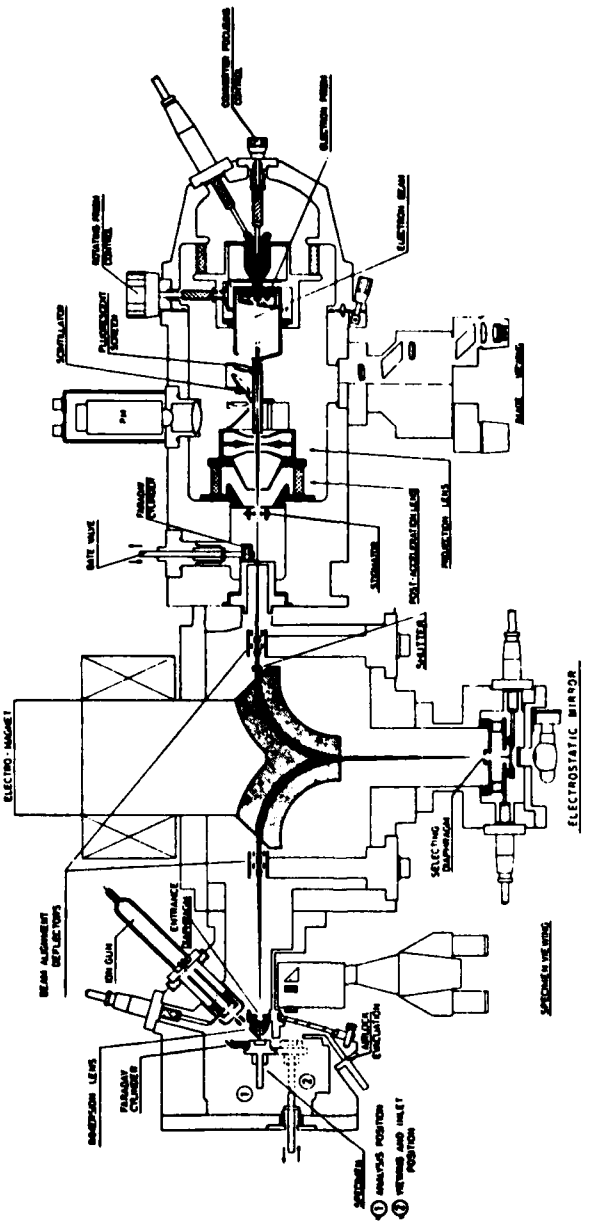


Figure 22. Slodzian-Castaing-Rouberol Ion Microanalyzer

An example of a typical ion image in this case prepared by the scanning ion microprobe is shown in Figure 23. Here the image of an aluminum grid pressed into gold (Reference 24) is shown using $^{27}Al^{+}$ ions. The picture shows an area 300 micrometers (Reference 2) and required two seconds to expose.

Another concept in imaging is shown in Figure 24 where the SIMS apparatus is coupled with a high resolution scanning electron microscope (Reference 25). Here a leak valve admits a suitable gas into the ion source region where ions are produced and accelerated at voltages up to 5 KeV. Lens assemblies permit focusing of the ion beam from less than 100 micrometers to a few millimeters diameter on the specimen surface. Deflection plates enable scanning of the ion beam for imaging or depth profile purposes. To prevent contamination from diffusion pump oils depositing on the specimen surface, a liquid nitrogen (LN_2) cold trap is used either surrounding the specimen or in the inlet to the diffusion pump. A gas capillary jet directed at the specimen surface may be used to reduce surface contamination from hydrocarbon pump oils. The use of oxygen in the capillary jet when a noble gas is used for sputtering also provides an active gas on the surface to maintain high and constant secondary ion yields.

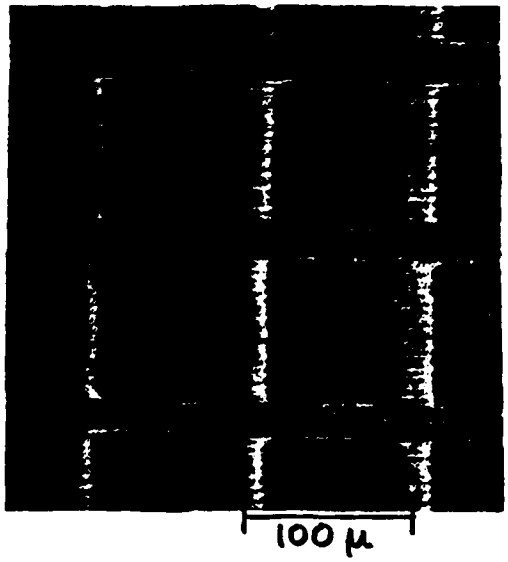


Figure 23. Scanning Ion Image of an Aluminum Grid on Gold

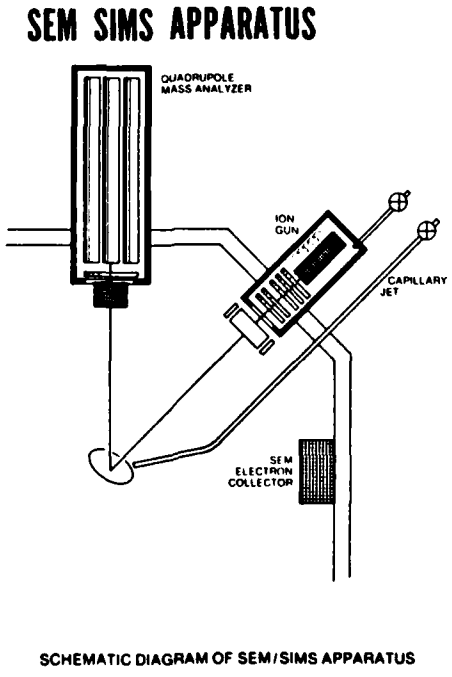


Figure 24. SIMS/SEM Combination (Reference 25)

SECTION VII

SIMS AS A COMPLEMENT TO OTHER METHODS OF SURFACE ANALYSIS

It is recognized that SIMS has been used successfully as a stand-alone technique to solve many surface problems. However, it appears that the area of greatest use of the SIMS technique is as a complement to other surface characterization methods. The extremely high sensitivity for some elements can be taken advantage of by using SIMS with other techniques in which these elements do not show such high sensitivity. The high sensitivity of SIMS for hydrogen and low atomic number elements is a particular advantage when SIMS is used with techniques such as ion scattering. Since ion scattering and each of the other surface characterization methods in which profiling data is obtained by erosion uses an ion beam, it is only natural to take advantage of this erosion by ions by analyzing these sputtered species. Figure 25 shows typical arrangements for complementary use of SIMS with ISS and AES. Even when the usual geometry cannot be used in an existing instrument, a little ingenuity in design can provide good SIMS results such as in the design of Figure 26. An area in which SIMS proves very valuable is to differentiate between nearby elements in which sufficient resolution is not obtained in the accompanying technique. Such an example was reported where the ion scattering spectrum of a foil lining screw cap showed only an unresolved peak which could have been either indium or tin. SIMS data on the other hand, showed unmistakably that a mixture of the two elements were present in the foil liner. Still another extremely useful area is a similar example as shown in Figure 27 where the titanium alloy Ti6Al4V has been treated with a commercial phosphate fluoride treatment and gives the ion scattering spectrum to the right of the figure. It can be seen that the surface is contaminated but it is not obvious whether the contaminated peak is calcium or potassium. The SIMS data to the left of the ISS spectra shows that primarily calcium is present on the surface and is responsible for the shoulder on the side of the titanium peak. Note also the vanadium at atomic mass No. 51 and the inability of ISS to differentiate between titanium and vanadium.

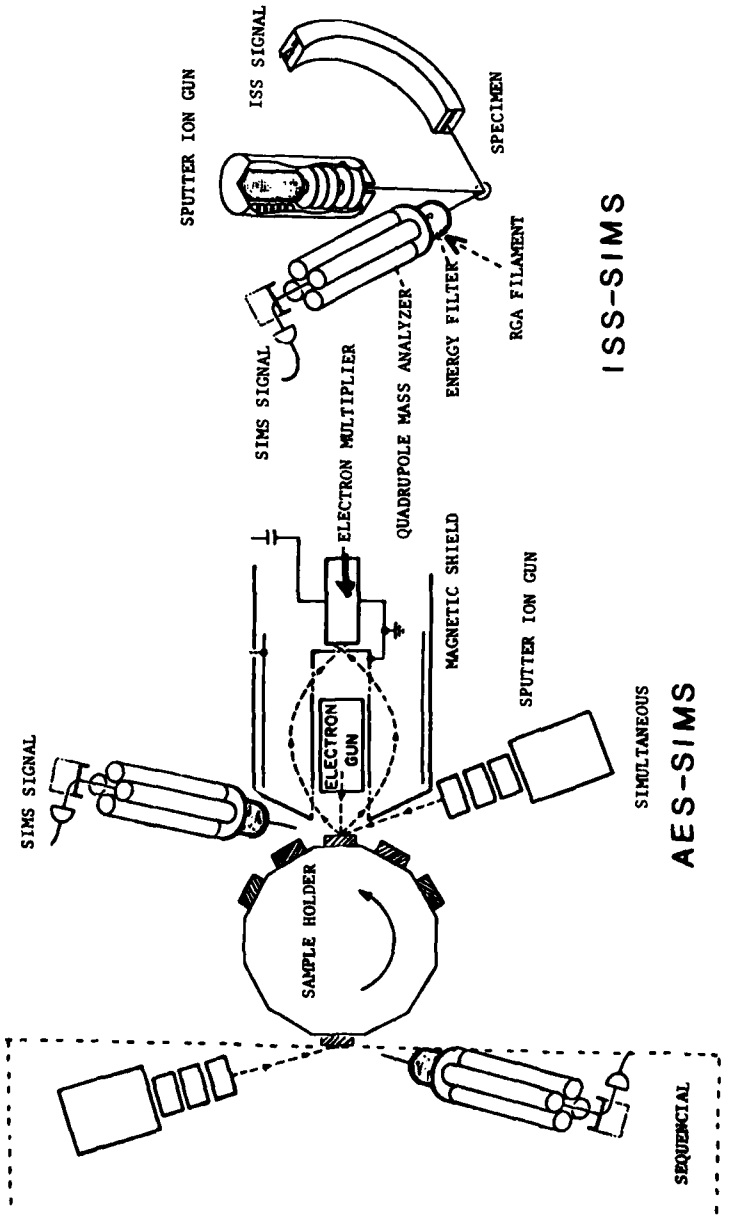


Figure 25. Complementary Use of SIMS with AES & ISS

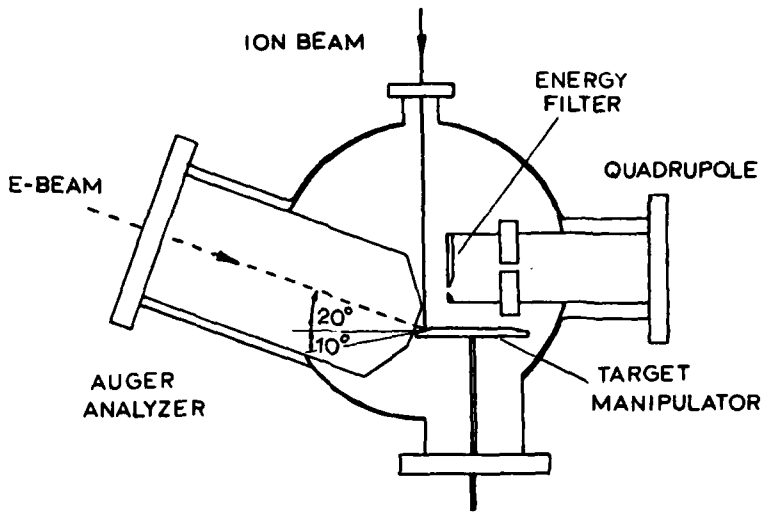


Figure 26. A Unique Design to Allow Simultaneous AES & SIMS

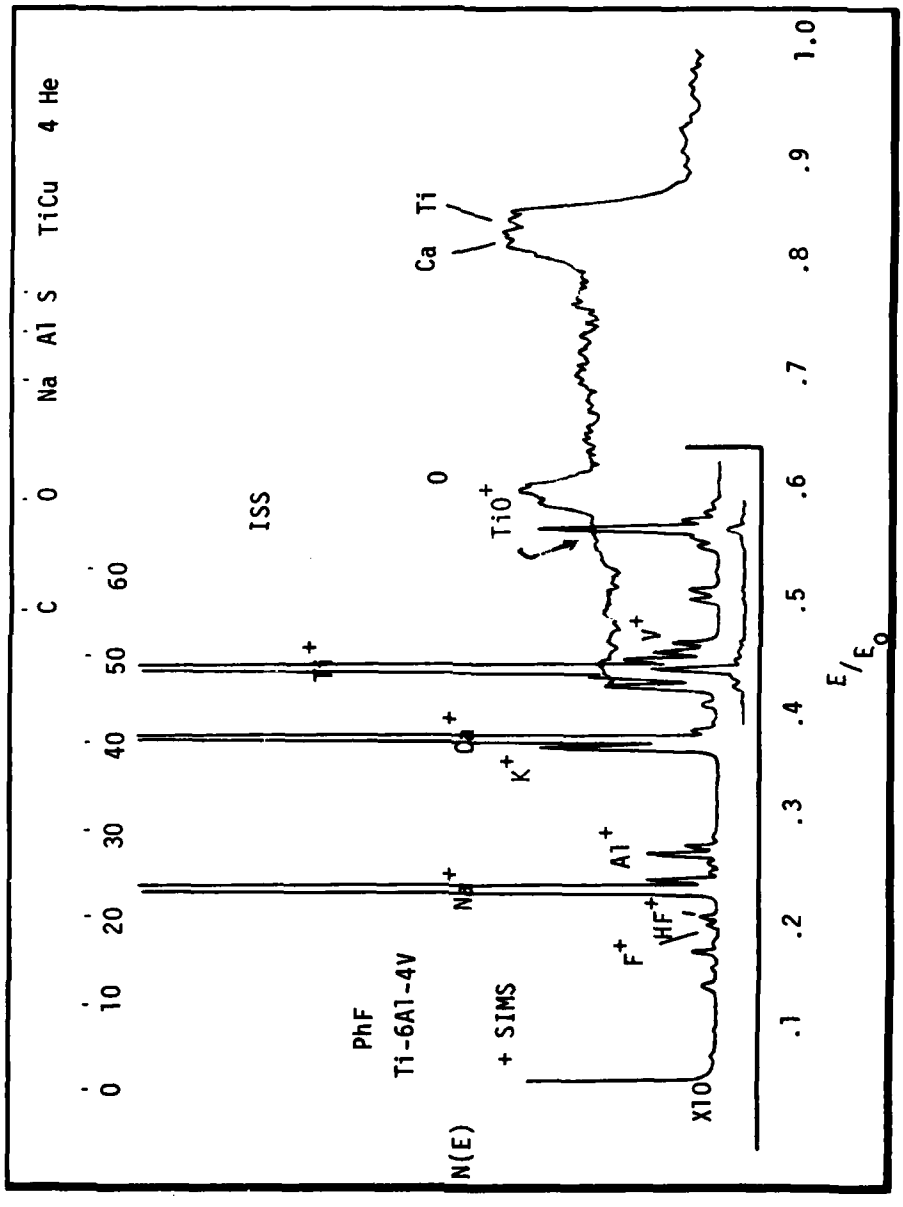
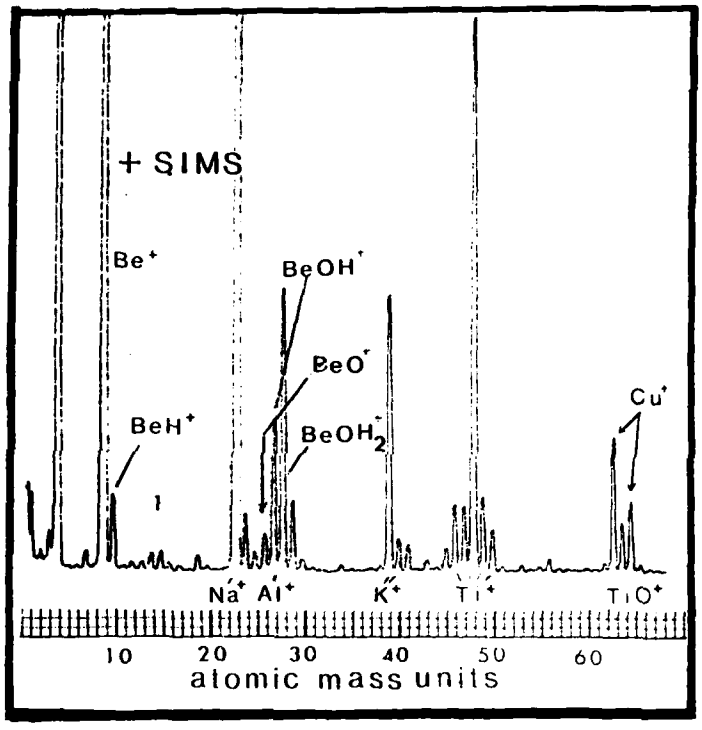


Figure 27. ISS/SIMS Data for Ti6Al4V Alloy Treated by the Phosphate Fluoride Method

The extremely high sensitivity for low atomic number elements such as beryllium was taken advantage of in the solidification behavior of a $Be_{40}Ti_{50}Zr_{10}$ glass. It was found in this study and illustrated in Figure 28 that an excess amount of beryllium was found on the surface of the as-cast material. The material was quenched rapidly on a copper plate and traces of copper on the alloy surface were found. Cluster spectra in the region of mass 25-30 also shows that the beryllium is probably in an oxidized state or exists as a hydroxide on the surface. Thus SIMS by inference gives somewhat more information than techniques giving only elemental characterization information. In addition to showing sensitivity for many low atomic number elements, the SIMS technique has high sensitivity for many high atomic number elements. An example of this is shown in Figure 29, where a small amount of lead (Pb) impurity is seen in uranium dioxide. This lead impurity was not observed or separated in any of the other elemental techniques.

Mass resolution of SIMS is clearly an aid to ISS when examining certain groups of elements having adjacent mass numbers which cannot be resolved by ISS. Figure 30 shows the ISS spectra of chemically cleaned aluminum and aluminum treated with a dilute sodium silicate solution. While the slight shift in the aluminum peak position suggests silicon, it is insufficient except for very questionable qualitative analysis. Figure 30 shows the SIMS spectra of the same samples. The ratio of silicon to aluminum in the outer layers of the silicate treated aluminum appears to be about three to one. Depth profile analyses showed the thickness of the silicate coating to be only a few monolayers.

Baun (Reference 32) showed a very similar example in a study of adhesive bonding surfaces on aluminum alloys. Even "as received" materials show surprising surface composition as seen in Figure 31 where SIMS and ISS data on 2024 aluminum alloy (degreased) indicate high magnesium concentration at the surface. Conventional alkaline cleaning treatments do not etch the surface appreciably, leaving the surface magnesium rich. Such a surface when adhesively bonded may exhibit long time durability anomalies when compared with bonded structures in which formation of aluminum oxide has been ensured. The same author



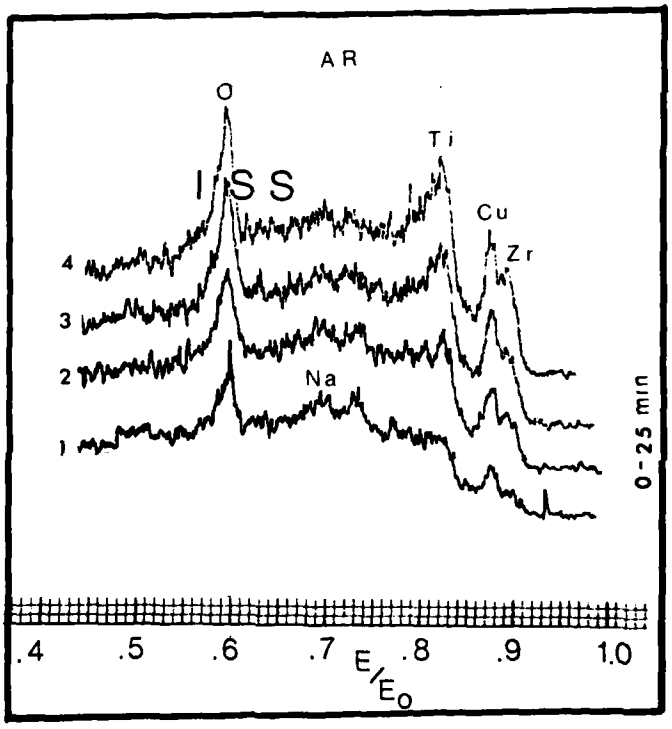


Figure 28. ISS/SIMS Data for a Rapidly Solidified $Be_{40}Ti_{50}Zr_{10}$ Sample Quenched on Copper

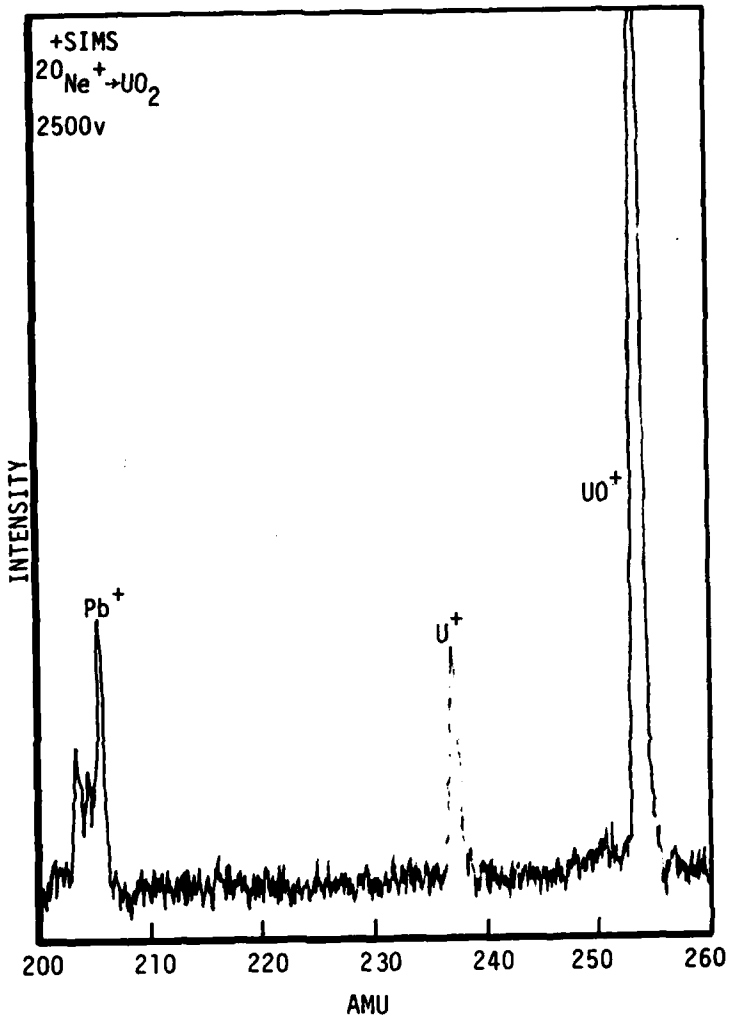


Figure 29. +SIMS Data for UO_2 Sample Showing Pb Impurity

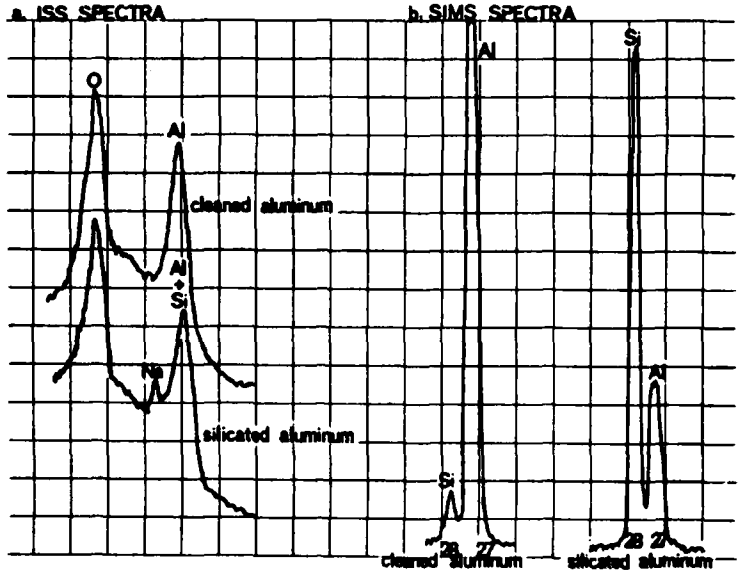


Figure 30. ISS/SIMS Data for Cleaned & Silicated Aluminum

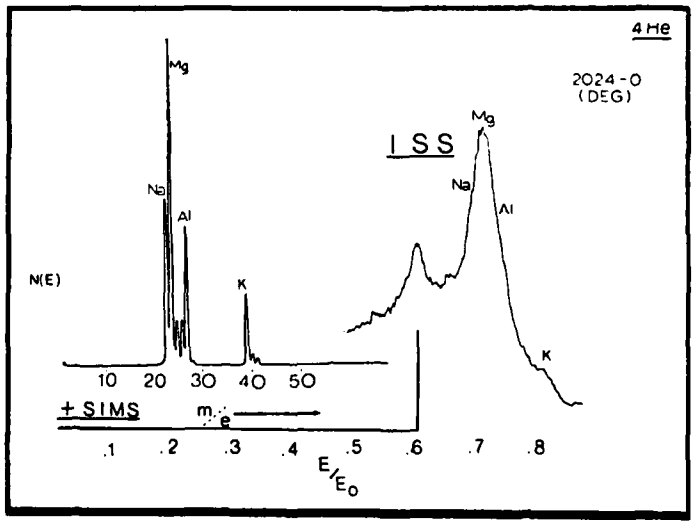


Figure 31. ISS & +SIMS Data from 2024 Aluminum Alloy. No Treatment Except for Degreasing

(Reference 33) also showed that ion scattering spectrometry and secondary ion mass spectrometry provide useful information on the locus of failure in an adhesive joint even when the film is only on the order of atomic dimensions or when the failure occurs near the original interface and includes parts of both the adhesive and adherend. SIMS was a near necessity in providing analysis of neighboring elements with the required sensitivity for adhesive bonding research.

SECTION VIII

APPLICATIONS

Many of the papers which appear in the literature concern primarily the technique of using SIMS; however, as the method becomes better developed more and more applications will appear. In the accompanying bibliography many illustrations are seen in which the technique is used either by itself or as a complementary method to another surface characterization tool. For instance, it is used for the study of thin films (2H), the surface chemistry of stainless steels (3A), silicon oxygen interaction (3F), surface oxidation studies on iron (5D), and of copper beryllium surfaces (9F). The index to the bibliography provides a comprehensive list of applications of SIMS.

Sparrow (Reference 34) has shown numerous applications of SIMS such as depicted in Figure 32, spectra from three aluminum castings prepared for painting. Sparrow shows that in many cases, particularly castings, metal surfaces are physically abraded prior to deposition of paints, polymers or laminates. These techniques serve two distinct purposes: 1) they remove the undesirable, thick surface oxides and contaminants, and 2) they produce a modified surface texture more desirable for the finished surface. The normal automatic mechanical techniques used occasionally do not remove contaminants sufficiently. Figure 32 illustrates SIMS spectra from three cast Al devices analyzed prior to paint coating. Specimen C indicates the original Al as received contains substantially high levels of Na, Mg, Si, and Ca. Sample B was sanded mechanically but still exhibits unusually high levels of Si. Both Al surfaces B and C resulted in paint coatings which exhibited early peeling and corrosion during normal exposure to humid environments. Manual sanding prior to paint coating resulted in removal of most Si as illustrated in A and yielded a product with an extended lifetime under similar environmental conditions. Sporadic and variable performance could also be correlated with the normal variations in surface concentrations of these contaminants on the original casting as received. Sparrow (Reference 35) has also developed a relationship used to calculate SIMS relative sensitivities which has been found to be extremely

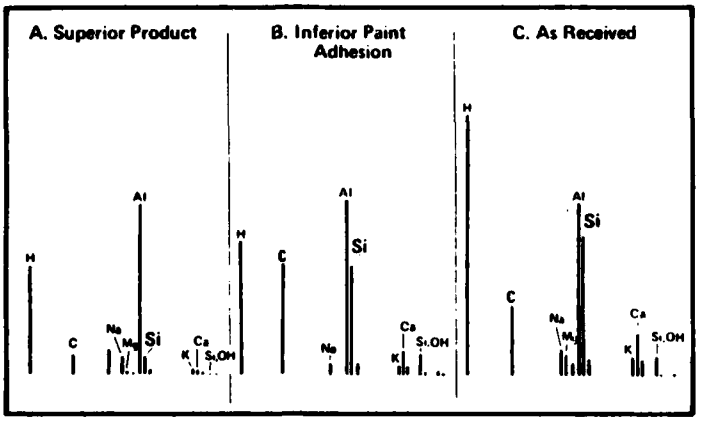


Figure 32. SIMS Spectra from Three Al Castings Showing Insufficient Removal of Contaminants Causing Reduced Weatherability of Paint Coating (Reference 34)

valuable for general use in providing reliable quantitative approximations for most materials. Further, more accurate relationships can be used for each specific problem; however, this relationship is reasonably accurate, simple, and convenient for general applications.

Several applications of this technique to catalysts have been made. Figure 33 illustrates results for one of these applications. Small Al_2O_3 beads approximately one millimeter in diameter homogeneously treated with Ni and Mo were analyzed to determine the cause of failures to rejuvenate spent catalyst. It is obvious that the spent catalyst is contaminated with Fe and low in Ni.

DiBennedetto and Scola (Reference 36) have used both ISS and SIMS to characterize surfaces of treated glass fibers and fiber/polymer interfaces. The results show how SIMS can be used to study the chemistry at the surface and chemical changes on the surface and at interfaces. By working at low power levels with insulator surfaces, the SIMS analysis showed changes in the structure of a polymerized silane coating as a function of depth of penetration into the interface. The concentration of nitrogen and hydrogen generated from the surface maintained a relatively constant level as the distance from the air-silane interface increased; then within 160A into the surface, a dramatic increase in the

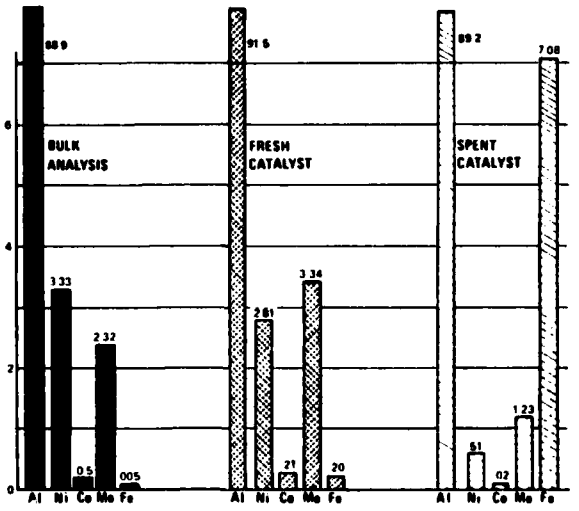


Figure 33. Quantitative Results Obtained from SIMS Analysis of Fresh & Spent NI/Mo Catalysts (Reference 35)

nitrogen level was noted, to a depth of 240A. In this region, the simplicity of the SIMS spectra, with major peaks corresponding to the atomic constituents of y-aminopropyltriethoxysilane, namely, H, C, N, O, and Si, suggested that low-molecular-weight oligomer was present in this region. This means that the silane coating was not sufficiently cured to provide a mechanically stable interface. Finally, from 240A to the silane-glass interface, the nitrogen and hydrogen generated from the surface reached a lower constant level but about three times higher than that generated from the air-silane domain. This suggests that the silane polymer coating adjacent to the glass interface is different from the silane polymer at the air interface. Thus, it is clear that the ISS/SIMS technique can be used to define the interface and interphase regions and also to follow changes at the interface due to a chemical reaction.

SECTION IX

SOURCES OF INFORMATION ON SIMS

SIMS is similar to many areas of research in that there is no one place in which much of the data is published. There is a relatively large bank of data, but it is scattered among many journals and periodicals. There are, of course, various abstracting services such as Chemical Abstracts, Physical Abstracts, and Science Abstracts. There are numerous reports and patent search services, both private and in the government sector. Several services may be subscribed to and include Current Contents (Institute for Scientific Information, Philadelphia, Pa) which reproduces the contents of current journals and other services such as Index to Scientific and Technical Proceedings. The Chemical Abstracts Service (POB 3012, Columbus, Ohio) also offers numerous services including the very useful "CA Selects," produced every two weeks by a computer search of Chemical Abstracts. "CA Selects" is based on a concept pioneered by United Kingdom Chemical Information Service. Several "CA Selects" topics are of interest to the surface analyst. A sample page from the title, Surface Chemistry (Physiochemical Aspects) is shown in Figure 34. The Mass Spectrometry Bulletin published monthly in the United Kingdom has, in Section 6, "Surface Phenomena and Solid State Studies." A sample column is shown in Figure 35 from Section 6.

Early SIMS bibliographic material to 1972 was published by Balzers Corporation and the 3M Company maintained a SIMS bibliography of more modern work. There have been numerous SIMS reviews as seen in the attached bibliography.

Appendix C is the compilation of early literature by Balzers. Appendix D is a computer search of recent (1972 - present) SIMS references.

88: 181773q **A comparison of a theoretical model and sensitivity factor calculations for quantification of SIMS data.** Smith, David H.; Christie, W. H. (Anal. Chem. Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn.). *Int. J. Mass Spectrom. Ion Phys.* **1978**, 26(1), 61–76 (Eng). The theor. local thermal equil. model of C. Andersen and J. Hinthorne (1973) and the empirical method based on using av. relative sensitivity factors for detg. surface element concns. by secondary-ion mass spectroscopy were compared by using ~1000 data points obtained from 13 glass and 5 Fe stds. The results showed that, if a suitable set of sensitivity factors can be obtained, more accurate results were obtained through their use. Exptl. results were within a factor of 2 of the expected values 85% of the time when the sensitivity factor method was used, but were within that factor only 55% of the time when the theor. model was used. The advantages and disadvantages and exptl. considerations for each method were discussed in detail.

88: 181857v **The determination of adsorbed sodium, potassium, magnesium, and calcium on sediments containing calcium carbonate and magnesium carbonate.** Neal, Colin (Inst. Hydrol., Wallingford, Engl.). *Clays Clay Miner.* **1977**, 25(4), 253–8 (Eng). A method is described for the detn. of Na, K, Mg, and Ca cations adsorbed on clay minerals mixed with $CaCO_3$ and $MgCO_3$. The exchangeable cations are displaced by using an ethanolic LiCl–CsCl soln. Blank detns. using either a second ethanolic leach or a second LiCl–CsCl leach are used to correct for carbonate dissoln. The method was tested by using mixts. of homoionic forms of smectite and kaolinite with either $CaCO_3$ or $MgCO_3$. The smectite and kaolinite had total cation exchange capacities of 765 and 39.8 mequiv/kg, resp., and the amt. of cation exchanged varied directly with the proportion of clay mineral in the mixt. Tests with smectite–$CaCO_3$ mixts. in sea waters of various salinity vindicated the use of the method with heteroionic forms of smectite and suggested that the fixation effect reported in other studies of clay minerals in estuarine conditions may be an artifact.

88: 181904h **ESCA investigation of the oxide layers on some chromium containing alloys.** Storp, S.; Holm, R. (Ing. Ber. Angew. Phys., Bayer A.-G., Leverkusen, Ger.). *Surf. Sci.* **1977**, 68, 10–19 (Eng). Cr in oxide layers formed on Cr, stainless steel, and Vitallium, and Fe in oxide layers formed on Fe and a Fe–Si alloy were detd. by ESCA. The oxide layers were formed by heating in air and exposure to H_2O and HNO_3 solns. Cr-rich oxide layers were obtained after heating in air at >400° and after exposure to H_2O and HNO_3. Fe(II) oxide was obtained in larger amts. on stainless steel than on the Fe and Fe–Si alloy samples. For samples contg. Mo and exposed to H_2O and HNO_3, the Cr oxide/Mo(VI) oxide ratio was ~10:1; Mo(IV) was also present.

88: 181915n **Spark mass spectrometric method for analysis of thin films and the surface layers of solids.** Liebich, V.; Mai, H. (Cent. Inst. Hard Subst. Mater., Dresden, E. Ger.). *Probl. Fiz. Tverd. Tela Materialoved., Tr. Simp., Akad. Nauk SSSR GDR* **1976**, 411–13 (Russ). Edited by Orlov, A. N.; Rozhanskii, V. N.; Kremenskaya, I. N. "Nauka": Moscow, USSR. Tech. modifications to the MS 7 mass spectrometer in order to reduce crater depths produced by spark discharges are briefly described. The shallower crater depths were preferred for anal. of thin films and solid surfaces. Crater depths of 0.04–0.13 μm on the surface of metal samples and of 0.02–1 μm on Cu layers on glass substrates were obtained. H. P. Maskova

88: 181974f **Low-energy ion scattering (LEIS) for composition and structure analysis of the outer surface.** Brongersma, H. H.; Buck, T. M. (Philips Res. Lab., Eindhoven, Neth.). *Nucl. Instrum. Methods* **1978**, 149(1–3), 569–75 (Eng). The energy distribution of low-energy ions (1–2 keV) scattered at some specific angle from a solid surface, can provide information on the mass, or identity, and the no. of surface atoms, through the energy position and magnitude, resp., of peaks in the spectrum. The sampling depth is restricted to 1–2 atom layers. For single-crystal targets, surface structure or atom location information can be derived from shadowing and multiple scattering effects. Applications to equil. surface segregation in alloys and the location of S atoms on the Ni (001) surface are shown as examples. The importance of inelastic effects is discussed.

88: 182048u **Use of poly(organosilsesquioxanes) as sorbents in liquid chromatography.** Ivanova, N. T.; Vasyukov, S. E.; Syavtsillo, S. V.; Vislykh, N. A.; Demchenko, A. I.; Loskutnikova, G. G. (USSR). *Usp. Gazov. Khromatogr.* **1975**, 4, Pt. 1, 211–16 (Russ). Synthesis of poly(methylsilsesquioxane), poly(methylphenylsilsesquioxane), and poly(vinylphenylsilsesquioxane) by hydrolytic polycondensation of the corresponding chlorosilanes is described and the physs. properties (sp. surface, thermal stability) of the products are given. The sorbents can be used for liq. chromatog. of different types of compds. Retention data of some compds. contg. Cl and ether and amino groups are tabulated. H. Bulantova

88: 182053s **Porous polyaromatic beads. II. The use of brominated polymers in gas chromatography.** Lindsay Smith, John R.; Tameesh, Adnan H. H.; Waddington, David J. (Dep. Chem., Univ. York, York, Engl.). *J. Chromatogr.* **1978**, 148(2), 365–71 (Eng). Two com. available porous arom. polymer beads used for gas chromatog., Porapak Q and Chromosorb 102, were brominated. The resulting polymers are significantly more stable to heat and, when treated with Br in CCl_4 (with or without thallium(III) acetate), the materials become much more suitable for the sepn. of polar adsorbates such as alcs. and carboxylic acids. The retention times of the adsorbates depend on the method of bromination used.

Figure 34. Sample Page from CA Selects "Surface Chemistry" (Physiochemical Aspects)

SECTION 6
SURFACE PHENOMENA AND
SOLID STATE STUDIES

548 Sputtering of Fe(iii) crystal under Ar(+) and Kr(+) ion bombardment

Bhattacharya R.S., Basu D., Karmohapatro S.B.
Indian J. Phys. V.48 N.10 P.941-3 1975
Ion impact, Single crystal, Sputtering, Surface, Ar, Kr

549 Ion penetration

Brown F.
PR-CMa-32 AECL-5122 Atomic Energy of Canada Ltd., Chalk River Nuclear Labs, Ontario, Canada Sect.1-2 P.8-21 1975
Channelling, Cross section, Ion impact, Ion implantation, Ionization, Range, Scattering, Single crystal, Surface, Al, Si, Cu, Ge, Kr, Pt, Silicon

550 Study of the Systems silicon-alumina and silicon-silica-alumina by mass spectrometry of secondary ions (Russian)
Didenko P.I., Litochenko V.G., Marchenko R.I., Romanova G.F.
Poluprovodn. Tekh. Mikroelektron. N.18 P.90-2 1974
Scattering, Scattering-ions, Secondary emission, Secondary ion emission, Sputtering, Surface, Temperature effects, Al, Si, AlO2(+), AlO(+), Semiconductors, SiO(+), Silicon-alumina system

551 Photoemission of positive ions in the reaction of nitrogen with hydrogen on platinum
Zav'yalov S.A., Gutman E.E., Myasnikov I.A.
Russian J. Phys. Chem. V.49 N.I. P.137-9 1975 Trans. from Zh. Fiz. Khim. V.49 N.I. P.237-8 1975
Adsorption, Chemical reactions, Free radicals, Ions, Photon impact, Secondary emission, Secondary ion emission, Surface, Temperature effects, H, Hydrazine, Platinum

552 Diatomic versus atomic secondary ion emission
Wittmaack K., Staudenmaier G.
Appl. Phys. Lett. V.27 N.6 P.318-20 1975
Ion impact, Microprobe, Molecular ions, Quadrupole, Secondary emission. Secondary ion emission, Sputtering Surface, Yield, Al Si, Ar, Ti, V, Cr, Ne, Mo, Ta, W, Au, Niobium, Silicon Tantalum

553 Redeposition of sputtered species during ion etching of Cu, Ag, and Au
Miller A.C., Czanderna A.W.
J. Vacuum Sci. Technol. V.12 N.5 P.1086-7 1973
Ion impact, Scattering, Scattering-ions, Sputtering, Surface Ne, Cu, Ag, Au, Copper foil, Gold foil, ISS, Silver foil

Figure 35. Sample of a Column from Section 6 of the Mass Spectrometry Bulletin (United Kingdom)

554 Bombardment of field-emission cathodes by positive ions formed in the interelectrode region
Brodie I.
Int. J. Electron, V.38 N.4 P.541-50 1975
Electrons, Field ionization, Ion impact, Ionization, Source, Sputtering. H

555 Secondary-electron emission in the backward and forward directions from thin carbon foils traversed by 25-250 KeV proton beams
Meckbach W., Braunstein G., Arista N.
Phys. B (Atom. Mol. Phys.) V.8 N.14 P.1344-9 1975
Electrons, Energy distribution, Ion impact, Retarding potential measurements Secondary emission, Secondary electron emission, Surface, Carbon foil

556 Experiments on compound analysis by secondary ion mass spectrometry (German)
Dittmann J.
Mikrochim, Acta, Suppl.6 P.359-71 1975
Chemical binding energy, Excitation, Fragmentation mechanism, Ion impact, Ions, Kinetics of ion formation, Low resolving power data, Molecular ions, Negative ions, Secondary emission, Secondary ion emission, SIMS, Steel, HO2

557 Average energy of sputtered ions from fifteen polycrystalline targets
Jurela Z.
Int. J. Mass Spectrom. Ion Phys. V.18 N.2 P.101-10 1975
Energy distribution, Ions, Kinetic energy, Negative ions, Sputtering, Theoretical, Yield, C, Mg, Al, Si, Mn, Co, Ni, Cu, Ge, Me, Ag, Ta, W, Pt, Au

558 A quantitative model for the interpretation of secondary ion mass spectra of dilute alloys
Gries W.H., Rudenauer F.G.
Int. J. Mass Spectrom. Ion Phys. V.18 N.2 P.111-27 1975
Chemical binding energy, Energy distribution, Ion impact, Ions, Secondary emission, Secondary ion emission, Sputtering, Surface Theoretical, Yield, Mg, Al, Si, Ar, Ti, Cu, Alloys, Aluminum, Copper, SIMS

559 Secondary ion mass spectrometry
Evans C.A.
9th Great Lakes Regional ACS Mtg., College of St. Thomas, St. Paul, Minn., USA 4-6 June 1975 Abstr. N.62
Conference, Ion impact, Microprobe, Secondary emission, Secondary ion emission, Sputtering, Surface, SIMS, St. Paul

560 Surface analysis by ion scattering and secondary ion mass spectroscopy
Gen R.F.
9th Great Lakes Regional ACS Mtg. College of St. Thomas, Ts. Paul, Minn., USA 4-6 June 1975 Abstr. N.63
Conference, Detection limit, Ion energy loss spectra, low impact, Ions, Negative Ions, Scattering, Scattering-ions, Secondary emission, Secondary ion emission, Sensitivity, Sputtering, Surface, ISS SIMS, St. Paul

Figure 35. Concluded.

REFERENCES

1. F. Arnot and J. Milligan, Proc. Roy Soc. A 156, 538 (1936).
2. R. Herzog and F. Viehbock, Phys. Rev. 76, 855 (1949).
3. R. Honig, J. Appl. Phys. 29, 549 (1958).
4. G. Carter and J. Colligon, Ion Bombardment of Solids, Heinemann Educational Books, London, 1968.
5. M. Kaminsky, Atomic and Ion Impact Phenomena on Metal Surfaces, Academic Press, New York, 1965.
6. A. Benninghoven, Surf. Sci. 53, 596 (1975).
7. H. Werner, Vacuum 10, 493 (1974).
8. H. Winters, Advances in Chem. Sci. 158, M. Kaminsky, Ed. ACS, 1976.
9. J. McHugh in "Methods of Surface Analysis," A. Czanderna, Ed., Elsevier, Amsterdam, 1975, p. 223.
10. Joyes, J. Phys. Chem. Solids 32, 1269 (1971).
11. J. Schroeer, Surf. Sci. 34, 571 (1973).
12. A. Czanderna, A. C. Miller, H. F. Helbig, Paper No. 128, Scanning Electron Microscopy/1978, Apr. 1978, Los Angeles, CA.
13. A. Socha, Surf. Sci. 25, 147 (1971).
14. H. Liebl, Anal. Chem. 46, 22A (1974).
15. P. H. Dawson and P. A. Redhead, Rev. Sci. Instr. 48, 159 (1977).
16. C. W. Magee, W. L. Harrington, R. Honig, Rev. Sci. Instrum., 49, 477 (1978).
17. M. G. Dowsett, R. M. King, and E. Parker, J. Phys. E 8, 704 (1975).
18. A. Benninghoven, Surf. Sci., 39, 416 (1973).
19. R. Herzog, W. Poschenrieder, and F. Satkiewicz, Proc. Int. Conf. Ion Surface Interaction, Ed. R. Behrisch and W. Heiland Gordon & Breach, London, 1972, p. 173.
20. A. Benninghoven and A. Muller, Phys. Lett. 40, 169 (1972).
21. C. A. Evans, Jr., Anal. Chem., 44, 67A (1972).
22. G. Muller, App. Physio., 317, (1976).

REFERENCES (CONCLUDED)

23. R. Honig and C. W. Magee, Surf. Char. Symp., Pittsburgh Conf., Cleveland, Ohio, Mar. 1978.

24. H. Liebl. J. Appl. Phys. 38, 5277 (1967).

25. J. A. Leys and J. T. McKinney, 10th Ann. Meeting, Microbeam Analysis Soc., August 11-15, 1975, Las Vegas, Nevada.

26. A. Benninghoven and E. Loebach, Rev. Sci. Instrum 42, 49 (1971).

27. C. Plog, L. Wiedmann and A. Benninghoven, Surf. Sci. 67, 565 (1977).

28. A. Benninghoven and W. Sichtermann, Anal. Chem. 50, 1180 (1978).

29. H. W. Werner, Dev. in App. Spectros. 7A, 239 (1969).

30. K. Wittmaack, Surf. Sci., 53, 626 (1975).

31. J. A. Leys and J. T. McKinney, Proceedings 9th Microbeam Analysis Society of America, July 1974, Ottawa, Canada.

32. W. L. Baun in Characterization of Metal and Polymer Surfaces, Vol. I, Academic Press, 1977, p. 375.

33. W. L. Baun, J. Adhesion 7, 261 (1976).

34. G. R. Sparrow, 2nd International Conference on Deburring and Surface Conditioning, Soc. of Manufacturing Engineers, Jun 7-9, 1977, Chicago, Ill.

35. G. R. Sparrow, American Society for Mass Spectrometry, San Diego, CA, May 1976.

36. A. T. DiBennedetto and D. A. Scola, J. Coll. Inter. Sci. 64, 480 (1978).

APPENDIX A

STABLE, NATURALLY OCCURRING ISOTOPES AND THEIR ABUNDANCES*

*Compiled by 3M Co., St. Paul, MN

RELATIVE ABUNDANCES OF NATURALLY OCCURRING ISOTOPES

Z↓	A→	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	H	99.9	.01																		
2	He				100																
3	Li						7.4	92.6													
4	Be									100											
5	B										18.3	81.7									
6	C												98.9	1.1							
7	N														99.6	0.4					
8	O																99.8	0.04	0.20		
9	F																			100	
10	Ne																				90.9

Z↓	A→	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
10	(Ne)	0.3	8.8																		
11	Na			100																	
12	Mg				78.6	10.1	11.3														
13	Al							100													
14	Si								92.2	4.7	3.1										
15	P											100									
16	S												95.0	0.8	4.2		0.02				
17	Cl															75.5		24.5			
18	Ar																0.34		0.06		99.6
19	K																			93.1	0.01
20	Ca																				97.0

Z↓	A→	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
19	K	6.9																			
20	Ca		0.6	0.1	2.1		.003		0.2												
21	Sc					100															
22	Ti						80	7.3	74.0	5.5	5.2										
23	V										0.3	99.7									
24	Cr										4.3		83.8	9.6	2.3						
25	Mn															100					
26	Fe														5.8		91.7	2.2	0.3		
27	Co																			100	
28	Ni																		67.8		26.2

Z↓	A→	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
28	(Ni)	1.2	3.6		1.2																
29	Cu			69.1		30.9															
30	Zn				48.9		27.8	4.1	18.6		0.6										
31	Ga									60.5		39.5									
32	Ge										20.5		27.4	7.7	36.7		7.7				
33	As															100					
34	Se														0.9		9.0	7.6	23.5		49.8
35	Br																			50.6	
36	Kr																		0.4		2.3

Z↓	A→	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
34	(Se)		9.2																		
35	(Br)	49.4																			
36	(Kr)		11.5	11.5	56.9		17.4														
37	Rb					72.2		27.8													
38	Sr				0.6		9.9	7.0	82.5												
39	Y									100											
40	Zr										51.5	11.2	17.1		17.4		2.8				
41	Nb													100							
42	Mo												15.9		9.1	15.7	16.5	9.5	23.7		9.6
43	Tc	DOES NOT OCCUR NATURALLY																			
44	Ru																5.6		1.9	12.7	12.6

Z↓	A→	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
44	(Ru)	17.1	31.6		18.5																
45	Rh			100																	
46	Pd		1.0		11.0	22.2	27.3		26.7		11.8										
47	Ag							51.4		48.6											
48	Cd						1.2		0.9		12.4	12.7	24.1	12.3	28.8		7.6				
49	In													4.3		95.7					
50	Sn												0.9		0.6	0.3	14.2	7.6	24.0	8.6	33.0
51	Sb																				
52	Te																				0.1

Z↓	A→	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
50	(Sn)		4.8		6.0																
51	(Sb)	57.3		42.7																	
52	(Te)		2.4	0.9	4.6	7.0	18.7		31.8		34.5										
53	I							100													
54	Xe				0.1		0.1		1.9	26.4	4.1	21.2	26.9		10.4		8.9				
55	Cs													100							
56	Ba										0.1		0.1		2.4	6.6	7.8	11.3	71.7		
57	La																		0.1	99.9	
58	Ce																0.2		0.2		88.5

Z↓	A→	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
58	(Ce)		11.1																		
59	Pr	100																			
60	Nd		27.1	12.1	23.8	8.3	17.3		5.8		5.6										
61	Pm	DOES NOT OCCUR NATURALLY																			
62	Sm				3.2			15.1	11.3	13.8	7.5		26.6		22.5						
63	Eu											47.9		52.1							
64	Gd												0.2		2.1	14.7	20.5	15.7	24.9		21.9
65	Tb																			100	
66	Dy																0.1		0.1		2.3

Z↓	A→	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
66	(Dy)	18.9	25.5	24.9	28.2																
67	Ho					100															
68	Er		0.1		1.6		33.4	22.9	27.1		14.9										
69	Tm									100											
70	Yb								0.2		3.0	14.3	21.8	16.1	31.9		12.7				
71	Lu															97.4	2.6				
72	Hf														0.2		5.2	18.5	27.1	13.8	35.2
73	Ta																				0.01
74	W																				0.2

Z↓	A→	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
73	(Ta)	99.9																			
74	(W)		26.4	14.4	30.6		28.4														
75	Re					37.1		62.9													
76	Os				0.02		1.58	1.6	13.3	16.1	26.4		41.0								
77	Ir											38.5		61.5							
78	Pt										.01		0.8		32.9	33.9	25.2		7.19		
79	Au																	100			
80	Hg																0.2		10.0	16.8	23.1

Z↓	A→	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
80	(Hg)	13.2	29.8		6.9																
81	Tl			29.5		70.5															
82	Pb				1.4		25.2	21.7	51.7												
83	Bi									100											

84 (Po), 85, (At), 86 (Rn), 87 (Fr), 88 (Ra), 89 (Ac), DO NOT OCCUR NATURALLY

Z↓	A→	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
90	Th								100												
91	Pa										100										
92	U														.006	0.7			99.3		

93 (Np), 94 (Pu), 95 (Am), 96 (Cm), 97 (Bk), 98 (Cf), 99 (Es), 100 (Fm), 101 (Md), 102 (No), 103 (Lw), DO NOT OCCUR NATURALLY

APPENDIX B

SOURCES OF INFORMATION ON SIMS AND OTHER SURFACE CHARACTERIZATION METHODS

I. ABSTRACTING AND CURRENT AWARENESS PUBLICATIONS

A. AMERICAN CHEMICAL SOCIETY
1155 Sixteenth St. N.W.
Washington D.C. 20036

a.) ACS PUBLICATIONS

i.) ACS Single Article Service

Biweekly. It consists of the table of contents of 18 ACS journals:

ii.) Chemical Titles (CT)

Biweekly. CT is a current-awareness publication which reports the titles of recently published papers of chemical interest. CT is designed to alert chemists and chemical engineers to current information appearing in approximately 700 of the world's most important chemical journals. Each issue contains a keyword index.

iii.) CA Selects

Biweekly. A CA Selects is published for 36 different subject areas, document coverage is the same as for Chemical Abstracts. Each issue contains abstracts on that subject.

b.) CHEMICAL ABSTRACTS SERVICE DIVISION

P.O. Box 3012
Columbus, Ohio 43210

i.) Chemical Abstracts (CA)

Weekly. CA contains bibliographic citations for and abstracts of documents whose contents is related to chemistry and chemical engineering. Weekly issues contain indexes. Abstracts are grouped into 80 sections. Some 14,000 different scientific journals from more than 150 countries and in more than 50 languages are monitored regularly as are patents from 26 countries, conference proceedings and dissertations.

B. INSTITUTE FOR SCIENTIFIC INFORMATION (ISI)
325 Chestnut Street
Philadelphia, Pennsylvania 19106

i.) Current Contents

Weekly. It consists of reproduction of the table of contents of the most important journals in science. Six different topics are published including:

Physical and Chemical Sciences
Engineering, Technology and Applied Sciences

ii.) ASCA (Automatic Subject Citation Alert)

Individualised current awareness program. The researcher is the only subscriber to the profile (based on key words, authors etc.). It covers the most recent issues of 5,200 journals. Does not include abstracts.

iii.) ASCA Topics

Weekly. Current awareness program covering over 460 predetermined areas. Format is the same as ASCA.

U.S. GOVERNMENT
National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161

i.) Government Reports Announcements

Biweekly. It contains abstracts of government research reports.

ii.) ERDA data bases

Many of the data bases used at the Lawrence Livermore Laboratory for determining physical and spectral properties are available through NTIS (National Technical Information Service). These include:

Spectroscopic Constants for Selected Heteronuclear Diatomic Molecules
Atomic Energy Levels and Transition data for the First and Second Ionisation States of the Elements Hydrogen through Phosphorous

MISCELLANEOUS

i.) CIS (Chemical Information System)

This system which consists of eight components was developed by NIH, EPA and NBS. It is now available to the public through Fein-Marquat Associates (7215 York Road, Baltimore, Maryland 21212). The components are as follows:

The Mass Spectra Search System (MSSS)
The X ray Crystallographic Search System (CRYST)
The Carbon-13 NMR Search System (CNMR)
The Structure and Nomenclature Search System (SANSS - formerly SSS)
The Powder Diffraction Analysis System (PDAS --to be available later this year)
The Registry of Toxic Effects of Chemical Substances (RTECS)
The On-line Modeling Laboratory (MLAB)
The Conformational Analysis of Molecules in Solution by Empirical and Quantum-mechanical Techniques System (CAMSEQ)

Selected Research in Microfiche (SRIM)

Biweekly. For each subject area chosen (there are about 500 available) full texts of research reports on microfiche which pertain to that subject area are sent to the subscriber.

APPENDIX C

EARLY LITERATURE 1963 - 1972

(FROM BALZERS LITERATURE SERVICE

SIMS DEC. 1973)

63 - 1 Untersuchung über die Emission positiver Sekundärionen und die Reflexion von Edelgasionen an Festkörperoberflächen.

V. Walther, H. Hintenberger
(MPI, Mainz, D).

Z. Naturforschg. (D), 18a, 843 - 853 (1963)

Elektronenstossquelle, Parabelspektr., C, Al, Fe, Cu, Ag, T, W, Pt, Au, 2 Hg-Diff.-P., 3 Öldiff.-P., Ausbeute der SI als Fkt. von PI-Energie, PI-Masse, Beschusszeit und Temperatur, Energievert. der SI und reflekt. PI.

63 - 2 Sputtering Ion Source for Solids.

H. J. Liebl, R. F. K. Herzog
(Geophys. Corp. America, Bedford, USA).

J. Appl. Phys., 34, 2893 - 2896 (1963).

Duoplasmatronquelle, Öldiff.-P. mit N2-Kühlfalle, Doppelfok. nach Liebl-Wachsmuth-Ewald, Permanentmagn., Aufl. 2000, Metalle, Isolatoren.

64 - 1 Use of Secondary Ionic Emission to Investigate State of Oxygen Adsorbed on a Silver Surface.

Ya. M. Fogel', B. T. Nadykto, V. I. Shvachko, V. F. Rybalko
(Univ., Khar'kov, Ukraine, SU).

Russ. J. Phys. Chem., 38, 1294 - 1297 (1964).

Ag, Sauerstoffadsorption, SI-Intensität als Funktion von Temperatur und O2-Partialdruck, magn. Ablkg.

64 - 2 Massenspektrometrische Untersuchungen über die Energieverteilung zerstäubter Partikel.

F. Kirchner, A. Benninghoven
(Univ., Köln, D)

Phys. Lett., 8, 193 - 194 (1964).

Energievert., Gegenfeld, 60 magn. Ablkg., Penningquelle versch. Al-Kathoden.

64 - 3 Secondary Positive Ion Emission from a Tantalum Surface

J. A. McHugh, J. C. Sheffield
(General Electric Company, Schenectady, N.Y., USA).

J. Appl. Phys., 35, 512 - 515 (1964).

Ta, 180 magn. Ablkg., SI-Ausbeute als Fkt. von PI-Masse und PI-Energie, Reflektionskoeff. der PI.

64 - 4 Positive Sekundärionenausbeute von 21 Elementen.

H. E. Beske
(Univ., Mainz, D).

Z. Naturforschg., D), 19a, 1627 - 1628 (1964)

SI-Ausbeute, Ionisierungsenergie, C, Mg, Al, Si, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zr, Nb, Mo, Ag, Ta, W, Pt, Au, U.

64 - 5 Use of Secondary Ion Emission to Study the Catalytic Oxidation of Ammonia on Platinum.

Ya.M. Fogel', B.T. Nadykto, V.F. Rybalko, V.I. Shvachko, I.E. Korobchanskaya
(Univ., Khar'kov, Ukraine, SU).

Kin. i Kat. (SU), 5,496 (1964), Russisch; Kin. and Cat. (USA), 5, 431 (1964).

Katalyse, Oxidation von NH3, H2S als Katalysenlösungsmittel, Pt

64 - 6 Comment on "Sputtering Ion Source for Solids".

H. P. Smith jr.
(Univ., Berkeley, Calif., USA)

J. Appl. Phys., 35, 3067 - 3067 (1964).

kein quantitatives SIMS bei 63-2.

A-3-2

65 - 1 Über die Energieverteilung der bei der Kathodenzerstäubung ausgeschleuderten Teilchen.

A. Benninghoven
(Univ., Köln, D).

Ann. Phys. (D), 15, 113 - 143 (1965)

Energievert. der Neutralen und Ionen, Gegenfeld, verschiedene Kathoden, Impulsübertragungsmodell.

66 1 Sur l'émission ionique secondaire des métaux en présence d'oxygène.

G. Slodzian, J.-F. Hennequin
(CNRS, Orsay, F).

C. R. Acad. Sci. (F), 263 B, 1246 :249 (1966).

magn. Doppelprisma mit el. Spiegel, O2-Partialdr. als Parameter für Winkel- und Energievert. und Ausbeute, Mg, Al, Si, Ti, Ni, Cu.

65 - 2 Application of the method of Secondary Ion-Ion Emission to the study of the Interaction of Oxygen with a Niobium Surface.

V.I. Shvachko, B.T. Nadykto, Ya.M. Fogel', B.M. Vasyutinskii, G.N. Kartmazov
(Univ., Khar'kov, Ukraine, SU).

Fiz. Tverd. Tela (SU), 7, 1944 - 1951 (1965), Russisch; Sov. Phys.-Sol. St. (USA), 7, 1572 - 1577 (1966).

Nb, Ausbeute versch. Oxid-Ionen, Temperaturverhalten, Öldiffp., magn. Abikg.

66 - 2 Distributions énergétique et angulaire de l'émission ionique secondaire. I. Appareil experimental. (Part II/III: 68 - 3,4)

J.-F. Hennequin
(CNRS, Orsay, F)

Rev. Phys. Appl. (F), 1, 273 - 281 (1966).

Abikg. mit Permanentmagn., beweglich. Analys., Gegenfeld für Energievert., HF-Quelle, el. Abikg. der PI, Öldiffp. für Quelle, PI-Einlass und Kammer, PI-Strahl-Profil.

65 - 3 Surface Ionization of Sputtered Atoms.

J. M. Schröer
(Cornell Univ., USA)

Bull. Am. Phys. Soc. (USA), 10, 41 (1965).

Mo, UHV, 2 Modelle der Ionisierung bei der Zerstäubung. Vergl. mit Exp., Einfluss von Beschussenergie, Target Temperatur und Austrittsarbeit.

66 - 3 Investigation of the Synthesis of Ammonia on Iron by the method of Secondary Ion-Ion Emission.

V.I. Shvachko, Ya.M. Fogel', V.Ya. Kolot
(Univ. Khar'kov, Ukraine, SU).

Kin. i Kat. (SU), 7, 834 - 840 (1966), Russisch; Kin. and Cat. (USA), 7, 734 - 738 (1966).

Fe, N-H3-Synthese, (3-Phasenmodell), Widerspruch zu 69 - 20.

65 - 4 Analyse des alliages par émission ionique secondaire.

R. Castaing, J. F. Hennequin

Quatrième Congrès International sur l'Optique des Rayons X et la Microanalyse, Orsay (1965) Hermann, Paris (1966), p. 64.

Legierungen.

67 - 1 Untersuchungen zur Emission positiver Sekundärionen aus festen Targets. Die Brauchbarkeit der Ionenbeschuss-Ionenquelle in der Massenspektroskopie.

H. E. Beske
(Univ. Mainz, D).

Z. Naturforsch. (D), 22a, 459 - 467 (1967).

pos. SI, Festkörperanal. (quantitativ), Ausbeute a...

A-33

67 - 2 Untersuchungen zum Spektrum und den Anfangsenergien negativer Sekundärionen.

A. Benninghoven
(Univ. Köln, D).

Z. Phys. (D), 199, 141 - 156 (1967).

Energievert., Gegenfeld.

68 - 1 Use of Secondary Ionic Emission to Study Bulk Processes in Solids.

V.F. Kozlov, V.M. Pistryak, Ya.M. Fogel',
(Acad. Sci., Khar'kov, SU).

Fiz. Tverd. Tela (SU), 10, 3713 - 3715 (1968), Russisch; Sov. Phys.-Sol. St. (USA), 10, 2952 - 2953 (1969).

Volumenprozesse.

67 - 4 Secondary Ion Emission

Ya.M. Fogel',
(Acad. Sci., Khar'kov, Ukraine, SU).

Usp. Fiz. Nauk (SU), 91, 75 - 112 (1967), Russisch; Sov. Phys. Uspekhi (USA), 10, 17 - 39 (1967).

Review.

68 - 2 Ein Massenspektrometer zur Untersuchung dunner Schichten.

H. W. Werner, H. A. M. de Grefte
(Philips, Eindhoven, NL).

Vak. Technik, 17, 37 - 41 (1968).

pos. SI, quantitative Festk. Analyse, SI-Austeute, Matrixeff.

67 - 5 Excitation and Ionization of Atoms at a Surface.

J.M. Schröer
(Univ. of Wyoming, USA).

Bull. Am. Phys. Soc. (USA), 12, 137 (1967).

2 N. herungen fur Ionisierung und Anregung bei Zerstaubung, Vergl. mit Exp.

68 - 3 Distributions énergétique et angulaire de l'émission ionique secondaire. II. Nature et distribution énergétique des ions secondaire. (Part. I: 66-2, Part III: 68-4).

J.-F. Hennequin
(CNRS, Orsay, F)

J. Phys. (F), 29, 655 -663 (1968).

Klassifizierung der gemess. Ionen, Energievert., Emissionswinkel, Austrittsenergie der Neutralen, Mg, Al, Si, Ti, Fe, Ni, Cu.

67 - 6 Verwendung der Ionenoptik zur Mikroanalyse.

R. Goutte, C. Guillaud, R. Javelas, J.P. Meriaux
(Sci. Appl., Lyon, F)

Optik (D), 26, 574 - 581 (1967/68).

Review, 3 prinzipiell versch. Apparaturen.

68 - 4 Distributions énergétique et angulaire de l'émission ionique secondaire. III. Distribution angulaire et rendements ioniques. (Part. I: 66-2, Part II: 68-3).

J.-F. Hennequin
(CNRS, Orsay, F).

J. Phys. (F), 29, 957 - 968 (1968).

Winkelvert. der SI als Funkt. von Orientierung, Ein

A-3-4

68 - 5 Mass Analysis of Ions Produced by Hypervelocity Impact.

D.O. Hanson
(TRW. Redondo Beach, Calif., USA).

Appl. Phys. Lett. (USA), 13, 89 - 91 (1968).

Beschuss mit mikrosk. Eisenpart. bis 600 eV, Flugzeitsp.

68 - 6 Oxidation of Tungsten at room temperature.

V. F. Rybalko, V. Ya. Kolot, Ya. M. Fogel'
(Acad. Sci., Khar'kov, Ukraine, SU)

Fiz. Tverd. Tela (SU), 10, 3176 - 3178 (1968), Russisch; Sov. Phys. Sol. St. (USA), 10, 2518 - 2519 (1969).

W, Oxidation.

68 - 7 Massenspektrometrische Untersuchung der Sekundärionen-Emission von Legierungen.

J. Schelten
(Univ. Mainz, D).

Z. Naturforschg. (D), 23a, 109 - 113 (1968).

Penningquelle, Doppelfok. nach Mattauch-Herzog, Auflosg. 300, 5 Öldiff.-P, Kuhlfallen mit fl. Luft, Al- und Fe-Legierungen mit max. 10% Verunreinigg., Si-Ausbeute und Konzentration, Vergl. mit Langmuir-Saha-Gl.

68 - 8 Ion Impact Desorption of Hydrogen from Glass.

R. Konjevic
(University of Liverpool, GB),
W. A. Grant, G. Carter
(Dept. of Electrical Engineering, Univ. of Salford, Lancs, GB).

Vacuum (GB), 18, 559 - 559 (1968).

Glas, Desorption von H und H2, therm. Desorption, E

68 - 9 Temps de désexcitation Auger d'un trou créé par bombardement ionique sur un niveau électronique lié d'un atome du métal irradié.

P. Joyes, J.F. Hennequin
(CNRS, Orsay, F).

J. Phys. (F), 29, 483 - 487 (1968).

Verbindung zwischen Sekundärionen und -elektronen.

68 - 10 Microanalyseur par émission ionique secondaire.

J. M. Rouberol, J. Guernet, J. P. Dagnot, J. M. Guyon de la Berge, G. Möllenstedt, K. H. Gaukler:

5th Int. Congr. on X-Ray Opt.-Microsc., 311 - 318 (1968), Springerverlag Berlin-Heidelberg New York (D), 1969.

magn. Abbg. Ionenmikroskop.

68 - 11 Mass and Energy Analysis of Positive Ions Emitted from Metallic Targets bombarded by heavy Ions in the keV Energy Region.

Z. Jurela, B. Perovic

Can. J. Phys. (CDN), 46, 773 (1968).

Metalle, pos. SI, Energievert.

69 - 1 Progress in Analytic Methods for the Ion Microprobe Mass Analyser. Part I. (Part II: 70-5).

C.A. Andersen
(Appl. Res. Labs. Goleta, Calif., USA).

J. Mass Sp. Ion Ph. (NL), 2, 61 - 74 (1969).

Review

A-35

69 - 2 Eine massenspektrometrische Methode zur Bestimmung von Zerstäubungsrate und Sekundärionenausbeute beliebiger Substanzen mit Hilfe dünner Schichten.

A. Benninghoven
(Univ. Köln, D).

Z. Angew. Phys. (D), 27, 51 - 55 (1969).

Zerstäubungsrate, SI-Ausbeute, Au, Ag, In, Zn.

69 - 3 Zum Mechanismus der Ionenbildung und Ionenemission bei der Festkörperzerstäubung.

A. Benninghoven
(Univ. Köln, D).

Z. Phys. (D), 220, 159 - 180 (1969).

Ionisierung, Emission, Rückneutralisierung.

69 - 4 Die Emission negativer Sekundärionen von Verbindungen mit komplexen Anionen.

A. Benninghoven
(Univ. Köln, D).

Z. Naturforsch. (D), 24a, 859 - 861 (1969).

neg. SI aus komplexen Anionen.

69 - 5 Investigation of Solids by means of An Ion-Bombardment Mass Spectrometer.

H.W. Werner
(Philips, Eindhoven, NL).

Developments in applied spectroscopy, Chicago, Ill. (USA), 13 - 17. Mai 1968; London (GB), Plenum 1969, 239 - 266.

Oxidation und Ionenausbeute, Diffusionsprofile, Diff. von In in Ge.

69 6 Method of Studying the Mechanism of Catalytic Processes using Secondary Ion Ion Emission.

V.L. Kuchaev, A.A. Vasilevich, L.O. Apel'baum, M.N. Temkin, Ya.M. Fogel',
(Karpov Institute, Moskau, SU).

Kin. y Kat. (SU), 10, 678 - 681 (1969), Russisch Kinetics and Catal., 10, 561 - 564 (1969).

Unterscheidung der SI aus Gasphase und Oberfl., Ca-Verunrein. in Pt-Oberfl.

69 - 7 Effect of Ion Bombardment on a Gas Film Adsorbed on the Surface of a Metal.

V.F. Rybalko, Ya.M. Fogel', V. Ya. Kolot
(Univ, Khar'kov, SU).

Zh. Fiz. Khim. (SU), 43, 955, Russisch; Russian J. Phys. Chem., 43, 527 - 529 (1969).

Bedeckung, Adsorptionsgleichgew., SI-Stromdichte, Abhangigkeit von Druck und Primärstrom.

69 - 8 On Sputtering Probability of Secondary Tungstenoxide Ions with Ar^+ Ions.

V. F. Rybalko, V. Ya. Kolot, Ya. M. Fogel'

Ukrayin Fiz. Zh. (SU), 14, 913 (1969), Russisch.

W, Oxidation.

69 - 9 Investigation of the Oxidation of Tungsten by the Method of Secondary Ion-Ion Emission.

V. F. Rybalko, V. Ya. Kolot, Ya. M. Fogel'

Izv. Ak. Nauk SSSR Ser. Fiz. (SU), 33, 836 (1969), Russisch.

W, Oxidation.

A-36

69 - 10 Effect of Oxygen Pressure on the Oxidation Process of Tungsten.

V. F. Rybalko, V. Ya. Kolot, Ya. M. Fogel'

(Acad. Sci., Khar'kov, Ukr., SU)

Fiz. Tverd. Tela (SU), 11, 1404 - 1406 (1969), Russisch, Sov. Phys. Sol. St. (USA), 11, 1142 - 1143 (1969).

W. Oxidation, 02-Partialdruck.

69 - 11 Investigation of Oxygen Adsorption on Tungsten by Secondary Ion-Ion Emission.

V. F. Rybalko, V. Ya. Kolot, Ya. M. Fogel'

(Acad. Sci., Khar'kov, Ukr., SU).

Zh. Tekh. Fiz. (SU), 39, 1717 - 1719 (1969), Russisch; Sov. Phys Tech. Phys. (USA), 14 1290 - 1291 (1970).

W (100), Oxidation, 02-Adsorption

69 - 12 Mass and Energy Analysis of Negative Ions Emitted from Al, Mn, Co, Ta, and Au Targets Bombarded by 40 keV Ar^+ - Ions.

Z. Jurela

(Boris Kidric Inst. Nucl. Sci., Belgrad, YU).

Editura Akademiei Republicii Socialistic Romania: 9th international conference on phenomena in ionized gases, 1969, Bukarest, Rumänien, 1 - 6 Sep. 1969, p. 89.

Al, Mn, Co, Ta, Au, Energievert., neg. SI, Elektronenaffinität und Bedeckungsgrad als Ausbeuteparameter.

69 - 13 Secondary Emission of Mo^+ Ions during Bombardment of Molybdenum by Alkali-Metal Ions.

A. A. Adylov, V. I. Veksler, A. M. Reznik

(Univ., Taschkent, SU).

Fiz. Tverd. Tela (SU), 11, 1779 - 1787 (1969), Russisch; Sov. Phys. Sol. St. (USA), 11, 1441 - 1447 (1970).

Mo, Mo^+, Matrixverunreinigg., Hg-Pumpen, Energievert. bei versch. PI-Energ., Temperatur, PI-Stromdichte und Druck als Ausbeuteparameter.

69 - 14 Analysis of Submonolayers on Silver by Negative Secondary Ion Emission.

A. Benninghoven

(Univ., Köln, D)

Phys. Stat. Sol. (D), 34, K 169 - 171 (1969).

Monolage, statisch, magn. Ablkg., 10 ppm.

69 - 15 Expulsion d'un électron lié due au choc de deux atomes d'un métal.

P. Joyes

(CNRS, Orsay, F).

J. Phys. (F), 30, 243 - 251 (1969).

kinetische Emission der SI, Ionisierung in der Tiefe, Lebensdauer der virtuellen Ionisierung.

69 - 16 Etude théorique de l'émission ionique secondaire.

P. Joyes

(CNRS, Orsay, F).

J. Phys. (F), 30, 365 - 376 (1969).

kinetische Emission, Ein- und Mehrfachionisierung, theoretische Ausbeuten und Energiespektren der SI, Al, Mg, Cu.

69 - 17 The Origin of Multi-Charged Secondary Ions, Produced by the Ionic Bombardment of a Metal

J. F. Hennequin, G. Blaise, G. Slodzian

C. R. Acad. Sci. (F), 268B, 1507 - 1510 (1969), Französisch.

Mehrfachionisierte SI, kinetische Emission leichter Metalle, Ladungstransfer mit PI bei schweren Metallen.

A-3-7

69 - 18 An Ion Microprobe Analyser.

H. Nishimura, J. Okano
(Univ. Osaka, J).

Japan J. Appl. Phys. (J), 8, 1335 - 1345 (1969).

IMMA, Doppelfok., Intensitat als Fkt. des Oberfl.-Zustandes, Nachweisempf. fur Ti, V, Cr, Mn, Fe, Co, Ni in Fe-Legierungen und fur B in Si, Fe-Meteorit Odessa.

69 - 19 Electron and Ion Microprobe Analysis.

F. Heinrich
(Nat. Bur. Stand., Washington, D. C., USA).

L. Marton: 10th Symp. Electron, Ion and Laser Beam Tech., Gaithersburg, Md. (USA), 21 - 23 May 1969 (San Francisco, Calif., USA: San Francisco Press Inc. 1969), p. 353 - 362.

Elektronen- und Ionenmikrosonde, Review

69 - 20 The Use of an Ion Probe Technique for Investigating Surface Reactions: The Synthesis of Deutero-Ammonia on Pure Iron.

J. C. Robb, D. R. Terrell, D. W. Thomas
(Univ., Birmingham, GB).

D. Price, J. E. Williams: Dynamic Mass Spectrometry, 1, 87 - 104 (1969), Heyden + Son Ltd., Sadtler Res. Lab. Inc.

Fe, N-D3-Synthese, Widerspruch zu 66-3, Flugzeitspektrometer.

69 - 21 Application of the Ion Microprobe Mass Analyser.

C. A. Andersen, H. J. Roden, C. F. Robinson
(Hasler, Goleta, Calif., USA).

K. Ogata, T. Hayakawa: Rec. Dev. in Mass Sp., 215 - 224 (1970), Univ. Park Press, Baltimore-London-Tokyo; Proc. Int. Conf. Mass. Sp., Kyoto (J), 8 - 12 Sep. 1969.

IMMA von Liebl, Duoplasmatron, Doppelfok

70 - 1 Application de l'émission ionique secondaire a l'analyse des couches superficielles.

R. Hernandez, P. Lanusse, G. Slodzian.

CR. Hebd. Sean. Acad. Sci. Scr. B. (F), 271B, 1033 - 1036 (1970).

Zerstaubungsprozesse, Doppelfok.

70 2 Einfluss der Oberflächenzusammensetzung auf die durch Aufspaltung einer Ionenbindung verursachte Sekundärionenemission von Festkörpern.

A. Benninghoven
(Univ. Koln).

Phys. Lett. A (NL), 32a, 427 - 428 (1970)

SI durch Stossdissoziation, Rückneutrals.

70 - 3 Die Analyse monomolekularer Festkörperoberflachenschichten mit Hilfe der Sekundärionenemission.

A Benninghoven
(Univ. Koln).

Z Phys. (D), 230, 403 417 (1970)

statisch, Monolage, Ag, Mo.

70 - 4 Influence of Composition and Structure of Fe C Alloys on Discharge of Positive Ions during Atomization by Ionic Bombardment.

M. A. Vasil'ev, Yu. N. Ivashchenko, V. T. Cherepin.

Akad. Nauk. UKSSR. Metallofiz. (UdSSR), 32, 143 - 148 (1970), Russisch.

Fe-C-Legierung, pos. SI, Intensitat prop. C-Gehalt, Intens. unabh. von Matrixstruktur.

A-3-8

70 - 5 Analytic Methods for the Ion Microprobe Mass Analyser. Part II. (Part I: 69-1)

C. A. Andersen
(Appl. Res. Labs., Goleta, Calif., USA)

J. Mass Sp. Ion Ph. (NL), 3, 413 - 428 (1970)

zerstaubte Atome, SI-Emission, Elektr. Austausch SI-Oberfl., elektropos. und -neg. Pl.

70 - 6 Analysis by Bombardment with Chemically Reactive Ions.

C. A. Andersen, H. J. Liebl
(Appl. Res. Labs., Goleta, Calif., USA)

Patent USA 3508045, 12. Juli 1968; publ. 21. Apr. 1970, USA 753 822.

elektroneg. Pl, chemische Analyse.

70 - 7 Die Emission zusammengesetzter negativer Sekundärionen aus kontinuierlich regenerierten Targetoberflächen.

P. Mokler
(MPI Kernph., Heidelberg, D).

Z. Phys. (D), 232, 452 - 461 (1970)

SI-Emission, regener. Oberfl., Einflüsse auf SI-Intens., magn. Ablkg.

70 - 8 Secondary Ion Emission from Solid Surfaces.

R. Castaing, J.-F. Hennequin
(CNRS, Orsay, F).

Preprint, Int. Conf. on Mass Spec., Brussel; Sec. Ion Em. and Surf. Phen. (4. Sept. 1970).

Massenspektrometer, Ionenmikrosonde, Winkelvert. Energievert. durch Gegenfeld, quantitative kinetische SI-Emission.

70 9 Formation of Islands of a Diffusant under Surface Diffusion Conditions.

A. D. Abramenkov, V. V. Slezov, L. V. Tanatarov, Ya. M. Fogel',
(Acad. of Sci., Khar'kov, Ukraine, UdSSR)

Fiz. Tverd. Tela (UdSSR), 12, 2934 - 2941 (1970) Russisch; Sov. Phys. Sol. State, 12, 2369 - 2373 (1971).

Oberfl.-Diff. von Fremdmetallatomen, Inselbildung, Zonenstrukt.

70 - 10 Mass Spectrometric Analysis of Monomolecular Layers of Solids by Secondary Ion Emission

A. Benninghoven
(Univ. Koln, D)

Int. Conv. Mass Spectr., Brussel (B), (1970)

Monolage

70 - 11 Application of Mass Spectroscopy to the Analysis of Solids, a Review

R.E. Honig

Koreichi Ogata, Teruo Hayakawa: Rec. Developm in Mass Spectr., 116 - 149 (1970), Univ. Park Press, Baltimore-London-Tokyo

Review

70 - 12 Secondary Ion Yields in a Sputtering Mass Spectrometer

H. Doi, H Tamura, I. Omura, T. Kondo, S. Taya

Koreichi Ogata, Teruo Hayakawa: Rec. Development in Mass Spectr. 1089 - 1093 (1970) Univ. Park Press, Baltimore-London-Tokyo

SI-Ausbeute, Duoplasmatron, Doppelfok., Adsorption

A-39

70 - 13 Mass Analysis of Positive and Negative Secondary Ions Emitted from Na-Cl and K-Cl Monocrystals Bombarded by 40 keV Argon Ions.

Z. Jurela

A. Moljk, M. Kasumovic, M. Gerineo: Fizika, 2, 64 (1970), Iupap, YU; (Proc. V. Symp. Phys. of Ionized Gases, Hercegenovi, 1970).

Austrittsarbeit und Leitfähigkeit als Parameter der SI-Ausb., Na-Cl, K-Cl.

70 - 14 A study of the Cleaning of Carbon Impurity from Molybdenum.

V.Ya. Kolot, V.I. Tatus, V.F. Rybalko, Ya.M. Fogel'

Ukr. Fiz. Zh. (SU), 15, 226 - 268 (1970), Russisch; Ukr. Phys.J. (USA)

Mo, C-Verunreinig., Ausheizen

70 - 15 Observing Surface Oxidation of Molybdenum with the Statical Method of secondary Ion Mass Spectroscopy

A. Benninghoven
(Univ. Köln, D)

Chem. Phys. Lett., 6, 626 - 628 (1970)

Mo. Oxidation, magn. Ablkg., statisch

70 - 16 Use of an MI-1305 Mass Spectrometer to Study the Secondary Ion Emission of Solids.

M.A. Vasil'ev, Y.N. Ivashchenko, V.T. Cherepin.

Instr. Exp. Techn., 2, 523 - 525 (1970)

Ti, Apparatur MI-1305

70 - 17 Mass-Spectrometric Investigation of Ion Emission Produced during Bombardment of Materials by Argon Ions.

M.A. Vasil'ev, Yu.N. Ivashchenko, V.T. Cherepin

Akad. Nauk. UKSSR. Metallofiz. (SU), 32, 148 - 153 (1970), Russisch

Apparatur MI-1305, Ti, V, Si-Intensitäten für 13 Metalle.

70 - 18 Investigation of Oxygen Adsorption on a Molybdenum Surface by means of Secondary Ion-Ion Emission

V.Ya. Kolot, V.I. Tatus', V.F. Rybalko, Ya.M. Fogel'

Zh. Tekh. Fiz. (SU), 40, 2469 - 2471 (1970) Russisch; Sov. Phys.-Tech. Phys. (USA), 15, 1934 - 1936 (1971)

Mo (100), 02-Adsorption, Oxidation, 2-Phasenmodelle, Vergl. W.

70 - 19 Monoschichtanalysen an Eisenoberflächen

A. Benninghoven, E. Stumpe
(Univ. Köln, D)

Verhandl. DPG (D), 3, 199, VA-61 (1970)

Fe, Monolage

70 - 20 Investigation of Surface Diffusion of Copper Atoms on Molybdenum by Secondary Ion-Ion Emission

A.D. Abramenkov, V.V. Slezov, L.V. Tanatorov, Ya.M. Fogel'
(Acad. Sci., Kharkov, Ukraine, SU)

Fiz. Tverd. Tela (SU), 12, 2929 - 2933 (1970) Russisch; Sov. Phys.-Sol. St. (USA), 12, 2365 - 2368 (1971)

Cu auf Mo, Inselbildung, Oberfl.-Diff. (Diff. [illegible]

A-3-10

70 - 21 Alternances dans les intensités en ion moleculaires secondaires emis par des métaux nobles soumis a un bombardment ionique primaire.

P. Joyes

IV. Coll. Nat., Brest, 13 - 15 Mai, 16 H 30 (1970)

Stosstheorie, mehratomige Ionen

70 - 22 Analytical Applications of an Ion Microprobe Mass Spectrometer.-Negative Ion Spectroscopy

C.A. Evans jr.

Int. Conf. Mass Sp., Brüssel (B), (1970)

Ionenmikrosonde, neg. SI

71 - 1 Untersuchung der Grenzflächen und des Volumens dünner Schichten mit Hilfe der Sekundärionen-Massenspektroskopie .

A. Benninghoven, S. Storp.
(Univ. Köln)

Z. Angew. Phys., 31, 31 - 37 (1971)

dünne Schichten, UHV, Al auf Mo aufgedampft, oberfl. und innere Kontam - und Oxidschichten

71 - 2 Beobachtung von Oberflächenreaktionen mit der statischen Methode der Sekundärionen-Massenspektroskopie. I. Die Methode.

A Benninghoven
(Univ. Köln)

Surface Sci. (NL), 28, 541 - 562 (1971)

Review

71 3 Emission ionique secondaire des Alliages Cuivre-Aluminium en Présence d'Oxygène

D. Brochard, G. Slodzian
(CNRS, Orsay, F)

J. Phys. (F), 32, 185 - 190 (1971)

Mehrfachionisierung durch angeregte Schalen bei Al, O2-Einfluss auf Emission von Cu+, Al++, Al+++.

71 - 4 Emission ionique secondaire des éléments de transition en solution diluée dans des alliages, influence des etats électroniques localises.

G. Blaise, G. Slodzian
(CNRS, Orsay, F)

C.R. Hebd, Sean, Acad. Sci.B. (F), 273B, 357 - 360 (1971)

Ionenemission von Übergangsel. in Matrix aus Fe, Co, Ni, Cu, Al, lokale el. Struktur und Ionis.-Warsch.

71 - 5 Mass Spectrometric Method of Detection of Negative Ions from the Target Surface during Low Energy Sputtering

A.B. Campbell, C.B. Cooper

J. of Physics E, 4, 876 - 878 (1971)

neg SI, magn. Ablkg., Untersch. der SI aus Oberfl. und Vol

71 6 Analysis of Surfaces Utilizing Sputter Ion Source Instruments

A.J. Socha
(Bell Howell, Pasadena, Calif., USA)

Surface Sci. (NL), 25, 147 - 170 (1971); Symposium on modern methods of surface analysis, Murray Hill, N.J., USA (14. Mai 1970)

Review

A 3-11

71 - 7 Emission d'ions négatifs par une cible métallique mince bombardée par des ions positifs

S. Paletto, R. Goutte, C. Guillaud
(Lab. D'Optique Corpusc., d'Electroacoustique, 69-Villeurbanne, F).

CR Acad. Sci. (F), 273B, 975 - 978 (1971)

neg. SI, SIMS in Transm. und Reflexion, Energieanalyse, var. Gegenfeld

71 - 8 Die Analyse von Festkörperoberflächen und dünnen Schichten mit der statischen Methode der Sekundärionen-Massenspektroskopie

A. Benninghoven
(Univ. Koln,D).

M. Auwarter: Ergebnisse der Hochvakuumtechnik und der Physik dunner Schichten, Band II, 81 - 101 (1971), Wissensch. Verlagsges., Stuttgart (D)

Review

71 - 9 *Mass Spectrometric Analysis of Monomolecular Layers of Solids by Secondary Ion Emission*

A. Benninghoven
(Univ. Koln, D).

A. Quayle: Advances in Mass Spectrometry, 5, 444 - 447 (1971), Elsevier Publ. Co. Ltd.

Monolage

71 - 10 Mass Spectrometric Measurements of the Secondary Ion Emission of Alloys as an Analytical Tool

V. Cherepin

A. Quayle: Advances in Mass Spectrometry, 5, 448 - 450 (1971), Elsevier Publ. Co. Ltd.

Legierungen, Oberfl.-Analyse

71 11 New Analytical Techniques Provided by the Ion Analyser.

R.K. Lewis
(Cameca, Elmsford, N.Y. USA)

10th national meeting of the society for applied spectroscopy (abstracts only), St. Louis, Mo., USA, 18 - 22 Oct. 1971; (New York, USA: Soc. Applied Spectroscopy 1971), p. 10

$10^{**}-15$ bis $10^{**}-19$ g Nachweisgrenze, Diffusionsprofile, Tiefenauflösung 100 Å

71 - 12 Ein Tandem-Massenspektrometer zur Untersuchung der Sekundärionenemission von Festkörperoberflächen

A. Benninghoven, E. Löbach
(Univ. Koln, D).

Verhdl. DPG (D), 6, 593 (1971)

Elektronenbeschuss, Quadrupol, UHV, statisch, W, Adsorption

71 - 13 Analyses de Couches minces de Silice par Emission ionique secondaire

B. Blanchard, N. Hilleret
(DCA, SEAPC)
J. Monnier
(LETI), (CENG, Grenoble, F).

Mat. Res. Bull. (USA), 6, 1283 - 1296 (1971)

Tiefenprofil von B in Si und Si-Oxiden, Ausbeute.

71 - 14 Tandem Mass Spectrometer for Secondary Ion Studies.

A. Benninghoven, E. Löbach
(Univ. Koln, D)

Rev. Sci. Instrum, 42, 49 - 52 (1971)

SIMS, EID, Quadrupol, UHV, statisch, Auflösung Mo.

A-3-12

71 - 15 Study of Molybdenum Oxide Surface Composition Using Secondary Ion-Ion Emission

V.Ya, Kolot, V.I. Tatus', V.F. Rybalko, Ya.M. Fogel'

Izv. Akad. Nauk SSSR Ser. Fiz. (SU), 35, 255 - 260 (1971), Russisch; Bull. Acad, Sci, USSR, Phys. Ser. (USA)

Mo, Mo-Oxide, Temperatur und 02-Partialdruck als Parameter der Oxidbedeckung.

71 - 16 Effect of Oxigen Pressure on the Initial Stage in the Oxidation of Molybdenum

V.Ya. Kolot, V.I. Tatus', V.F. Rybalko, Ya.M. Fogel', V.V. Vodolazhchenko, V.M. Evseev
(Akad. Sci., Kharkov, Ukraine, SU)

Fiz. Tverd. Tela (SU), 13, 1521 - 1524 (1971), Russisch; Sov. Phys.-Sol. St. (USA), 13, 1275 - 1277 (1971)

Mo, (100), Oxidationsbeginn, 02-Partialdruck als Parameter der Oxidation.

71 - 17 Changes in the Characteristic Energy-Loss Spectrum of Molybdenum during Oxidation of the Molybdenum Surface

V.V. Zashkvara, V.Ya. Kolot, V.S. Red'kin, V.N. Demin, M.I. Korsunskii, Ya. M. Fogel'
(Acad. Sci., Alma-Ata, Kasachstan, SU)

Fiz. Tverd. Tela (SU), 13, 3376 - 3380 (1971) Russisch; Sov. Phys.-Sol. St. (USA), 13, 2836 - 2839 (1972).

Elektronenreflexion mit Energieverlustspektrum, auch SIMS; Oxydation als Parameter der Energieverlustspektren.

71 - 18 Ion Mass-Spectral Microscope

Yu.P. Maifet, V.T. Cherepin

Pribory Tekh. Eksp. (SU), 14, 272 (1971), Russisch; Instrum.+Exp. Tech. (USA), 14, 1587 (1971).

Oberfl., Volumen, opt. Auflösung 1 - 2μ, Bereich 1 - 120 amu, Massenauflös. 60, Empfindlichkeit $2*10^{**}-3$%, Tiefenauflösung 150 – 200 Å, 10^{**} - 6 Torr.

71 - 19 Mechanism of Formation of the Ion Component in Cathode Sputtering of Metals

V.I. Veksler, B.A. Tsipinyuk
(Univ. Taschkent, SU)

Zh. Eksp. Teor. Fiz, (SU), 60, 1393 1398 (1971), Russisch; Sov. Phys. JETP (USA), 33, 753 - 753 - 756 (1971)

Mo, magn. Ablkg., Nachionisierung, Energiespektren, kinetische Emission, nichtadiab. Emission.

71 - 20 Interaction of Ions and Electrons with Adsorbed Gases.

R. Clampitt
(Culham Lab., Abingdon, Engl., GB).

Proc. 2nd Int. Conf. Florenz (I), Apr 1971; F. Ricca: *Adsorption-Desorption Phenomena*, 203 - 212 (1972), Acad. Press. London, New York.

EID, SIMS, Ad- und Desorption, Energievert.

71 - 21 A Combined Ion and Electron Microprobe

H. Liebl

A. Quayle: Advances in Mass Spectrometry, 5, 433 - 435 (1971), Elsevier Publ. Co. Ltd.

Ionen- und Elektronenmikrosonde, doppelfok.

71 - 22 Secondary Ion Emission from Solid Surfaces

R. Castaing, J.F. Hennequin

A. Quayle: Advances in Mass Spectrometry, 5, 419 - 426 (1971), Elsevier Publ. Co. Ltd.

Augeneffekt

A-3-13

71 - 23 A Study of Quantitative Microanalysis by Secondary Ion Emission

M. Croset

Revue Tech. Thomson-CSF (F), 3, 19 - 36 (1971)

quantitative Titration, B in Si.

71 - 24 Alternations in the Secondary Emission of Molecular Ions from Noble Metals

P. Joyes
(CNRS, Orsay, F)

J. Phys. Chem. Sol. (GB), 32, 1269 - 1275 (1971)

Cu n + Ag n −, Parität von n, Stabilität, Ionis. Pot., Elektronenaffinität.

71 - 25 On a Mechanism of Secondary Emission of Polyatomic Particles

P. Joyes
(CNRS, Orsay, F)

J. Phys. B. (GB), 4, L 15 - 18 (1971)

Impulsübertrag längs Molekülachse, Emissionsenergie

71 - 26 The Ion Microprobe Mass Analyser

J.B. Nichelson
(Appl. Res. Labs., Sunland, Calif., USA)

10th national meeting of the society for applied spectroscopy (Abstracts only), St. Louis, Mo. (USA), 18 - 22 Oct 1971 (New York, USA: Soc. Appl. Spectroscopy 1971), p. 69 - 70.

IMMA, Review

71 - 27 Ion Probe

M. Bayard
(W.C. McCrone Associates Inc., Chicago Ill., USA)

Microscope (GB), 19, 425 - 426 (1971); Inter-Micro 71, London, GB, 20 - 24 Sep 1971

IMMA, Review, Empfindlichkeit, Spurenanalyse

71 28 Surface Analysis Using Simultaneous Electron and Ion Bombardment

C.R. Crawford
(MIT, Cambridge, USA)

10th national meeting of the society for applied spectroscopy (Abstracts only), St. Louis, Mo. (USA), 18 - 22 Oct 1971 (New York, USA: Soc. Appl. Spectroscopy 1971), p. 70

Elektronenrastermikr. und IMMA in einem Gerät, Tiefenprofile

71 - 29 Der Entwicklungsstand der Ionenmikrosonde für die Untersuchung von Festkörperwerkstoffen.

D.D. Klemm
(Univ. München, D)

Exp. Tech. Phys. (D), 19, 467 - 472 (1971)

Vergl. versch. SIMS- und IMMA-Apparaturen.

71 30 Analytical Applications of an Ion Microprobe Mass Spectrometer – Negative Ion Spectroscopy

C.A. Evans jr.

A. Quayle: Advances in Mass Spectrometry, 5, 436 - 440 (1971), Elsevier Publ. Co. Ltd.

Ionenmikrosonde, neg. SI

A-3-14

71 - 31 Analysis of Thin Films by Ion Microprobe Mass Analyser.

H.Tamura, T. Kondo, H. Doi

A. Quayle: Advances in Mass Spectrometry, 5, 441 - 443 (1971), Elsevier Publ. Co. Ltd.

IMMA, dünne Schichten.

72 - 3 Ion-Ion Emission - a New Tool for Mass-Spectrometric Investigations of Processes on the Surface and in the Bulk of Solids.

Ya.M. Fogel
(Gorki State Univ., Kharkov, UdSSR)

Int. J. Mass Sp. Ion P. (NL), 9, 109 - 125 (1972)

Review

71 - 32 Application of Mass Spectrometry to the Analysis of Semiconductor Materials

G.C. Sweeney, E. Berkey
(Westinghouse, Pittsburgh, Pa., USA).

10th national meeting of the society for applied spectroscopy, St. Louis, Mo., USA, 18 - 22 Oct 1971 (New York, USA: Soc. Appl. Spectroscopy 1971), p. 71 - 72

Vergleich von Massenspektrometern mit SI und Funkenionenquelle, Si, (Ga, As), Dotierungs- und Verunreinigungsanalysen.

72 - 4 Analysensystem zur Sekundär-Ionen-Massenspektrometrie im Ultra-Hochvakuum

W.K. Huber, E. Löbach
(Balzers, Liechtenstein)

Verhandl. DPG, 5, 470, 0 - 28 (1972)

Monolage, UHV, N2-Kuhlf., Turbop., Ti-Subl.-P., Quadr.

72 - 1 An Analytical System for Secondary Ion Mass Spectrometry in Ultra High Vacuum

W.K. Huber, H. Selhofer
(Balzers, Liechtenstein)
A. Benninghoven
(Universität Köln)

J. Vac. Sci. Tech. (USA), 9, 482 - 486 (1972); Proc. of the 5th int. vac. congr. part I, Boston, Mass., USA (1971)

UHV-Monolage, Profil, SIMS, EID, AES, Targetwechsler, El.-Quelle zur Entladung, Quadr., Turbop., N2 Kuhlf., Ti-Subl.-P.

72 - 5 Ein Sekundärionenmassenspektrometer hoher Nachweisempfindlichkeit mit elektrischem Quadrupol.

J. Maul, F. Schulz, K. Wittmaack
(GSF, Neuherberg).

Verhandl. DPG, 5, 444, S-21 (1972)

grobe Energieanalyse, Quadr., Plattenkondensator gegen Untergrund, Dotierungsprofile von B in Si (bis ppb).

72 - 2 Spectrographie de masse avec source à émission ionique secondaire

R. Hernandez, P. Lanusse, G. Slodzian, G. Vidal
(ONERA, Chatillon, F)

Recherche Aérosp. 313 (1972)

Mattauch Herzog doppel-fok., Monolage, Profil, Ausbeute, Ionenp., Ti-Subl.-P. Duoplasmatron, fraktion. Beschuss

72 6 Probleme und Empfindlichkeitsgrenzen der Sekundarionenmassenspektrometrie

F.G. Rudenauer

Verhandl. DPG, 5, 469, 0 27 (1972)

Parameter der Nachweisempf. (quantitativ), Ionenqu.-Emittanz, Analy.-Akzeptanz, Phasenraumanpassung, 0,001 ppb, magn. Ablkg.

A-315

72 - 7 Analyse von Festkörperoberflächen mit Hilfe der Sekundärionen-Massenspektroskopie (SIMS).

A. Benninghoven
(Univ. Köln)

Chemie-Ing.-Tech., 44, 910 (1972)

Review

72 - 8 Investigation of Negative-Ion Formation by Surface Ionization.

E.Ya. Zandberg, V.I. Paleev
(Acad. Sci. Leningrad, UdSSR).

Zh. Tekh. Fiz. (UdSSR), 42, 844 - 850 (1972) Russisch; Sov. Phys.-Tech. Phys. (USA), 17, 665 – 670 (1972)

neg. Spektren, Oberfl.-Ionis., EID, SIMS, Energievert., magn. Ablkg.

72 - 9 Polyatomic Negative Ions of Carbon and Carbon Compounds.

E.Ya. Zandberg, V.I. Paleev
(Acad. Sci., Leningrad, UdSSR)

Zh. Tekh. Fiz. (UdSSR), 42, 851 - 854 (1972) Russisch; Sov. Phys.-Tech. Phys. (USA), 17, 671 - 673 (1972)

neg. Spektr., Oberfl.-Ionis., magn. Ablkg., C_n^- bis n = 15, $C_n - H^-$ bis n = 13, $C_n - N^-$ bis n = 13, Einfluss von n auf Ausbeute.

72 - 10 Molybdenum Purified from a Carbon Impurity.

V.Ya, Kolot, V.I. Tatus', V.V. Vodolazhchenko, V.F. Rybalko, A.E. Grodshtein, N.D. Kirsanov, Ya.M. Fogel'

Zh. Tekh. Fiz. (SU), 42, 144 (1972), Russisch; Sov. Phys. Tech. Phys. (USA), 17.

72 - 11 Untersuchungen der Oberflächenoxidation von Cr, Ni und Cu im Submonolagen und Monolagenbereich mit SIMS.

A. Müller, A. Benninghoven
(Univ. Köln, D)

Verhandl. DPG (D), 5, 470, 0 - 29 (1972)

Cr, Ni, Cu, Oxidation, statisch, 02-Dosis als Parameter der Intensität, Zerstäubungsraten.

72 - 12 Investigation of the Initial stages of Vacuum Condensation of Silver on Nickel Substrates by Secondary Ion-Ion Emission.

A.D. Abramenkov, A.L. Seryugin, V.V. V.V. Dyatlova, Ya.M. Fogel', G.F. Potebnya
(Acad, Sci., Kharkov, Ukraine, SU).

Fiz. Met. + Metalloved, (SU), 33, 853 - 855 (1972), Russisch; Phys. Met. + Metallogr. (GB)

Ag auf Ni, zeitl. Intensitätsverlauf, Vakuumkondensation, Facettenbildung.

72 - 13 Mass Spectra Stimulated by 0^+ and Ar^+ Interacting with a Surface

M.W. Siegel, R.H. Krauss, J.W. Boring

J. Chem. Phys., 57, 3576 - 3578 (1972)

Cu.

72 - 14 The Study of Amorphous and Crystalline Silicon thin Films by Sputter-Ion Source Mass Spectrometry.

L.C. Feldman, F.G. Satkiewicz

Thin Solid Films, 12, 217 - 222 (1972)

Si, dunne Schichten.

A-316

72 - 15 Energy Distribution and Mean Energy of Secondary Ions from Polycrystalline Targets

Z. Jurela
(Boris Kidric Inst., Belgrad, YU).

6th Yugoslav Symposium on Physics of Ionized Gases, Split, YU, 16 - 21 Jul 1972 (Belgrad, YU: Inst. of Phys. 1972), p. 115 - 118.

Metalle, Halbleiter, Energievert. der pos. SI, nichtadiab. Emission.

72 - 16 Comparison of Secondary Ion Yields from Conducting, Semiconducting, and Nonconducting Targets Bombarded with 40 keV Argon Ions.

Z. Jurela
(Boris Kidric Inst., Belgrad, YU)

Radiat. Eff. (GB), 13, 167 - 170 (1972); Atomic Collisions in solids. IV. Physics of Channeling and Related Phenomena, Gausdal (N), 20 - 24 Sep 1971.

Al, Si, Ge, Ne-Cl, K-Cl, Ausbeute, Ionisierungsgrad, Energievert. der Atome, Emissionsmodell (Impulsübertragung, lokale Überhitzung), Ausbeute nicht prop. Konzentration.

72 - 17 Theory of the Ionization Probability for an Atom Crossing a Metal-Vacuum Surface

P. Joyes, G. Toulouse
(CNRS, Orsay, F)

Phys. Lett. (NL) 39A, 267 - 268 (1972)

Ionisierungswahrsch., Emission von Metallatom aus Metallmatrix.

72 - 18 Influence of Asymmetrical Correlations in the Secondary Emission of Solid Compounds.

P. Joyes
(CNRS, Orsay, F).

J. Phys. C. (GB), 5, 2192 - 2199 (1972).

kinetische Emission, 2-Komponenten-Targets, (Al, O); (Al, Cu).

72 - 19 Possibilities of the Ion Microprobe in Surface Analysis.

L. Habraken, V. Leroy, J.P. Servais
(CRM, Liege, B)

Electron and Ion Beam Science and Technology Fifth International Converence, Houston, Tex. (USA), Mai 1972 (Princeton, N.J., USA: Electrochemical Soc., Inc. 1972), p. 196 - 216.

Ionenmikrosonde, Oberfl.-Analyse, dünne Schichten, Beschusskrater, Mikroanalyse, Tiefenprofile überzogener Stähle.

72 - 20 A New Analytical Technique for Insulating Materials by Means of an Ion Microanalyser.

K. Nakamura, S. Aoki, Y. Nakajima
(Hitachi Ltd., Ibaraki-ken, J),
H. Doi, H. Tamura

Mass Spectrosc. (J), 20, 1 - 9 (1972)

Isolatoren, Elektronenbeschuss gegen Aufladung.

72 - 21 Ionenmikrosondenanalysatoren

H. Liebi
(Euratom-Assoziation, Garching, D).

Messtechnik (D), 80, 358 - 365 (1972)

Ionenmikrosonde, Review

72 - 22 Ion Microprobe Mass Analyser

C.A. Andersen, J.R. Hinthorne
(Hasler, Goleta, Calif., USA).

Science (USA), 175, 853 - 860 (1972)

Review, IMMA von Liebl.

A-317

APPENDIX D

RECENT LITERATURE - SIMS COMPUTER SEARCH OF CHEMICAL ABSTRACTS 1972 THROUGH 18 MAY 1978

LOCKHEED SYSTEM

Index identifies referenced by page number and alphabetical letter serially assigned to each reference.

Literature Index to Appendix D

CA07704025148G
Simultaneous SIMS (secondary ion mass spectroscopy), EID (electron impact desorption), and flash-filament investigations of the interaction of gases with a tungsten surface
Author: Benninghoven, A., Loebach, E., Treitz, N.
Location: I. Phys. Inst., Univ. Koeln, Cologne, Ger.
Section: CA066003 Publ Class: J
Journal: J. Vac. Sci. Technol. Coden: JVSTAL Publ: 72
Series: 9 Issue: 2 Pages: 600-2
Identifiers: gas tungsten surface interaction

CA07626159865B
Negative ion production by secondary electrons in a mass spectrometer ion source
Author: McAllister, T.
Location: Div. Chem. Phys., CSIRO, Clayton, Aust.
Section: CA071000 Publ Class: J
Journal: J. Chem. Soc., Chem. Commun. Coden: JCCCAT
Publ: 72 Issue: 4 Pages: 245-6
Identifiers: ion cyclotron resonance spectrum, neg ion mass spectrometer, mass spectrum cyclotron resonance

CA07612063713Z
Surface reactions studied using the statical method of secondary ion mass spectroscopy. I. Methods
Author: Benninghoven, A.
Location: I. Phys. Inst., Univ. Koeln, Cologne, Ger.
Section: CA066000, CA067000, CA079000 Publ Class: J
Journal: Surface Sci. Coden: SUSCAS Publ: 71
Series: 28 Issue: 2 Pages: 541-62 Language: Ger
Identifiers: mass spectroscopy surface reaction

CA07602007935M
Mass-spectrometric study of two stages of secondary ions formed in the course of interaction between I+ ions and propane
Author: L'Hote, J. P., Abbe, J. Ch., Paulus, J. M., Igersheim, R.
Location: Lab. Chim. Nucl., Cent. Rech. Nucl., Strasbourg, Fr.
Section: CA071000 Publ Class: J
Journal: Int. J. Mass Spectrom. Ion Phys. Coden: IJMIBY
Publ: 71 Series: 7 Issue: 4 Pages: 309-17
Language: Fr
Identifiers: propane mass spectrum, iodine propane mass spectrum, secondary ion iodine propane

CA07602007927K
Mass-spectrometric study of two stages of secondary ions formed in the course of collisions between I+ ions and butane or isobutane
Author: L'Hote, J. P., Abbe, J. Ch., Paulus, J. M., Igersheim, R.
Location: Lab. Chim. Nucl., Cent. Rech. Nucl., Strasbourg, Fr.
Section: CA071000 Publ Class: J
Journal: Int. J. Mass Spectrom. Ion Phys. Coden: IJMIBY
Publ: 71 Series: 7 Issue: 4 Pages: 319-26
Language: Fr
Identifiers: mass spectrum butane isobutane, iodine ion butane collision

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 148 of 160) User4269 12sep77

CA07814088949K
Surface investigation of solids by the statical method of secondary ion mass spectroscopy (SIMS)
Author: Benninghoven, A.
Location: I. Phys. Inst., Univ. Koeln, Cologne, Ger.
Section: CA066005 Publ Class: J
Journal: Surface Sci. Coden: SUSCAS Publ: 73 Series: 35 Issue: 2 Pages: 427-57
Identifiers: surface monolayer mass spectroscopy

CA07814088860Z
Investigation of surface layers by SIMS (secondary ion mass spectrometry) and SIIMS (secondary ion imaging mass spectrometry)
Author: Werner, H. W., De Grefte, H. A. M.
Location: Philips Res. Lab., N. V. Philips' Gloeilampenfabr., Eindhoven, Neth.
Section: CA066003 Publ Class: J
Journal: Surface Sci. Coden: SUSCAS Publ: 73 Series: 35 Issue: 2 Pages: 458-72
Identifiers: surface secondary ion mass spectroscopy

CA07812077179H
Analysis of monomolecular layers of solids by the static method of secondary ion mass spectroscopy (SIMS)
Author: Benninghoven, A., Loebach, E.
Location: I. Phys. Inst., Univ. Koeln, Cologne, Ger.
Section: CA071011, CA079000 Publ Class: J
Journal: J. Radioanal. Chem. Coden: JRACBN Publ: 72 Series: 12 Issue: 1 Pages: 95-9
Identifiers: secondary ion mass spectrometry, surface monolayer mass spectroscopy

CA07810063952T
Comparison between quadrupole and magnetic mass spectrometers for use in SIM (secondary ion mass spectrometry
Author: Rudenauer, F. G.
Location: Oesterr. Studienges. Atomenerg. G.m.b.H., Vienna, Austria
Section: CA071011 Publ Class: T
Journal: Ber. Oesterr. Studienges. Atomenerg. Coden: BOAEBM Publ: 72 Issue: PH-123, Pages: 8 pp.
Identifiers: mass spectrometer comparison, secondary ion mass spectrometry, magnetic mass spectrometer, quadrupole mass spectrometer

CA078060353412
Secondary-ion collection system for an ion microprobe analyzer of high-mass resolution
Author: Krohn, V. E., Ringo, G. R.
Location: Argonne Natl. Lab., Argonne, Ill.
Section: CA071011 Publ Class: J
Journal: Rev. Sci. Instrum. Coden: RSINAK Publ: 72 Series: 43 Issue: 12 Pages: 1771-2
Identifiers: secondary ion collection, ion microprobe analyzer, mass spectrometer ion collection

CA07714094391T
Mass spectrometer for analysis of solids bodies
Author: Alpat'ev, Yu. S., Dubinskii, I. N., Ol'khovskii, V. L., Pilipenko, A. P., Cherepin, V. T.
Location: Inst. Metallofiz., Kiev, USSR
Section: CA071011, CA079000 Publ Class: J
Journal: Prib. Tekh. Eksp. Coden: PRTEAJ Publ: 72 Issue: 3 Pages: 159-60 Language: Russ
Identifiers: mass spectrometer analysis solid, secondary ion emission solid, elemental analysis solid, layer analysis solic

CA07712081025B
Analysis of solid surfaces and thin films by the statical method of secondary ion mass spectroscopy
Author: Benninghoven, Alfred
Location: Phys. Inst., Univ. Koeln, Cologne, Ger.
Section: CA071011, CA079000 Publ Class: C
Journal: Ergeb. Hochvakuumtech. Phys. Duenner Schichten Coden: 25JOAI Publ: 71 Series: 2. Pages: 81-101 Language: Ger
Publisher: Wiss. Verlagsges. Address: Stuttgart, Ger
Avail: Auwaerter, Max
Identifiers: secondary ion mass spectroscopy, solid surface analysis

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 140 of 160) User4269 12sep77

CA079080468940
Analysis of stainless steel surfaces by secondary ion mass spectroscopy (SIMS)
Author: Huber, W. K., Loebach, E.
Location: Balzers A.-G. fuer Hochvakuumtech. und Duenne Schichten, Balzers, Liechtenstein
Section: CA071011 Publ Class: J
Journal: Vacuum Coden: VACUAV Publ: 72 Series: 22 Issue: 11 Pages: 605-8
Identifiers: stainless steel surface analysis, mass spectrometer steel surface, hydrocarbon contaminant stainless steel

CA079060363158
Study on properties of secondary ions by an ion bombardment mass spectograph
Author: Kusao, Kenji, Nakamura, Nobuo, Konishi, Fumiya
Location: Cent. Res. Lab., Matsushita Electr. Ind. Co., Ltd, Osaka, Japan
Section: CA071011 Publ Class: J
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 73 Series: 21 Issue: 1 Pages: 53-9 Language: Japan
Identifiers: mass spectrometer ion bombardment

CA07826.66017W
Ion microanalyzer
Author: Castaing, Raymond, Slodzian, Georges
Section: CA071011 Publ Class: P
Journal: Ger. Coden: GWXXAW Publ: 730118 Pages: 10 pp. Addn. to Ger. 1,498,646.
Identifiers: ion microanalyzer, imaging microregion, secondary ion mass spectrometer
Patent No: 1598245 Applic No: 4833 Date: 650209 Class: G 01n Country: Fr.
Assignee: Centre National de la Recherche Scientifique, CSF-Compagnie Generale de Telegraphie sans Fil

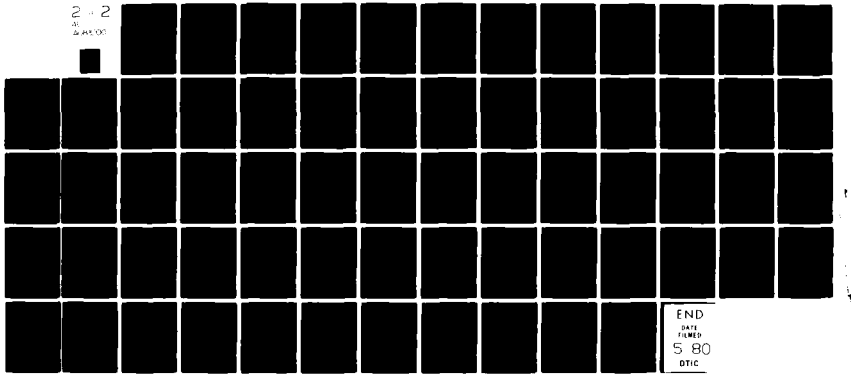
CA07824152874W
Simple, inexpensive SIMS (secondary ion mass spectrometry) apparatus
Author: Schubert, R., Tracy, J. C.
Location: Bell Lab., Murray Hill, N. J.
Section: CA071011 Publ Class: J
Journal: Rev. Sci. Instrum. Coden: RSINAK Publ: 73 Series: 44 Issue: 4 Pages: 487-91
Identifiers: secondary ion mass spectrometry, gallium arsenide mass spectrometry, arsenide gallium mass spectrometry cesiated gallium arsenide analysis, aluminum gallium arsenide analysis

CA07820131620K
Surface analysis of ion implantation by seconcary-emission mass spectroscopy
Author: Hernandez, R., Vidal, G., Lanusse, P., Slodzian, G.
Location: Off. Natl. Etud. Rech. Aerosp., Chatillon-sous-Bagneux, Fr.
Section: CA079001 Publ Class: J
Journal: Mem. Sci. Rev. Met. Coden: MRMTAU Publ: 73 Series: 70 Issue: 1 Pages: 47-52 Language: Fr
Identifiers: surface ion implanted analysis, mass spectrometry surface analysis, niobium thorium implantec analysis

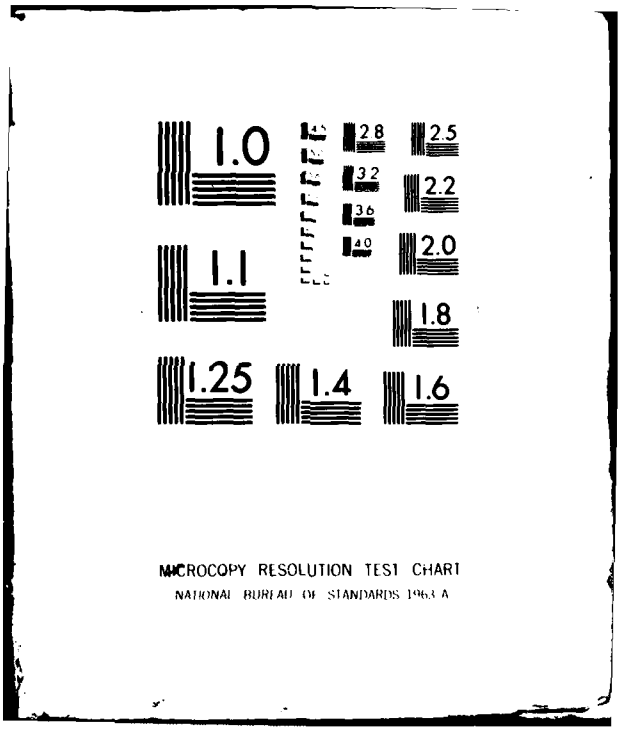
CA07818115583V
Study of Silicon-oxygen interaction with the statical methoc of secondary ion mass spectroscopy (SIMS)
Author: Benninghoven, A., Storp, S.
Location: I. Phys. Inst., Univ. Koeln, Cologne, Ger.
Section: CA066003, CA071000 Publ Class: J
Journal: Appl. Phys. Lett. Coden: APPLAB Publ: 73 Series: 22 Issue: 4 Pages: 170-1
Identifiers: adsorption oxygen silicon

CA07816103512H
Low background secondary ion mass spectrometer with quadrupole analyzer
Author: Wittmaack, K., Maul, J., Schulz, F.
Location: Phys. Tech. Abt., Ges. Strahlen- Umweltforsch. m.b.H. Muenchen, Neuherberg, Ger.
Section: CA071011 Publ Class: J
Journal: Int. J. Mass Spectrom. Ion Phys. Coden: IJMIBY Publ: 73 Series: 11 Issue: 1 Pages: 23-35
Identifiers: secondary ion mass spectrometer, quadrupole analyzer mass spectrometer

AD-A083 200 AIR FORCE MATERIALS LAB WRIGHT-PATTERSON AFB OH F/G 5/2
A REVIEW AND BIBLIOGRAPHY OF SECONDARY ION MASS SPECTROMETRY (S--ETC(U)
JAN 80 W L BAUN
UNCLASSIFIED AFML-TR-79-4123 NL



END
DATE FILMED
5 80
DTIC


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 133 of 160) User4269 12sep77

CA080020082S1E
Apparatus fundamentals and uses of the image-forming secondary-ion mass spectrometer
Author: Gaukler, K. H.
Location: Inst. Angew. Phys., Univ. Tuebingen, Tuebingen, Ger.
Section: CA071011. Publ Class: T
Journal: Ber. Kernforschungsanlage Juelich Coden: BKEJAS Publ: 73 Issue: Conf. 8, Pages: 279-304 Language: Ger
Identifiers: secondary ion mass spectrometer

CA079241407770
Velocity filtering for secondary ion quadrupole mass spectrometer
Author: Sroubek, Z.
Location: Inst. Radio Eng. Electron., Czech. Acad. Sci., Prague, Czech.
Section: CA071011 Publ Class: J
Journal: Rev. Sci. Instrum. Coden: RSINAK Publ: 73 Series: 44 Issue: 9 Pages: 1403-3
Identifiers: mass spectrometer velocity filter, ion velocity filter spectrometer

CA079181089651
Simultaneous SIMS (secondary ion mass spectrometry) and EID (electron-induced desorption) investigation on the interaction of oxygen with a tungsten (100) surface
Author: Benninghoven, A., Loebach, E., Plog, C., Treitz, N.
Location: I. Phys. Inst., Univ. Koeln, Cologne, Ger.
Section: CA066003 Publ Class: J
Journal: Surface Sci. Coden: SUSCAS Publ: 73 Series: 39 Issue: 2 Pages: 397-404
Identifiers: oxygen interaction tungsten, mass spectrometry oxygen tungsten, electronic desorption oxygen tungsten, desorption electronic oxygen tungsten

CA079140869961
Photo- and Auger electron spectroscopy (ESCA) and secondary-ion mass spectroscopy (SIMS). Comparison of two surface analysis methods
Author: Holm, Reimer
Location: Bereich Angew. Phys., Bayer A.-G., Leverkusen, Ger.
Section: CA079000, CA066000 Publ Class: J
Journal: Metalloberflaeche - Angew. Eletrochem. Coden: MAECCQ Publ: 73 Series: 27 Issue: 6 Pages: 199-207
Language: Ger
Identifiers: mass spectroscopy ion review, review photoelectron mass spectroscopy, Auger electron spectroscopy, secondary ion spectroscopy review, surface analysis review

CA079080469021
Ionic mass-spectral microscope (secondary-ion mass spectrometer)
Author: Maifet, Yu. P., Pilipenko, A. P., Cherepin, V. T.
Location: Inst. Metallofiz., Kiev, USSR
Section: CA071011, CA079000 Publ Class: J
Journal: Zavod. Lab. Coden: ZVDLAU Publ: 73 Series: 39 Issue: 4 Pages: 484-7 Language: Russ
Identifiers: secondary ion mass spectrometer, concn distribution detn

CA079080468976
Instrumental aspects of secondary ion mass spectrometry and secondary ion imaging mass spectrometry
Author: Werner, H. W.
Location: Philips Res. Lab., Eindhoven, Neth.
Section: CA071011 Publ Class: J
Journal: Vacuum Coden: VACUAV Publ: 72 Series: 22 Issue: 11 Pages: 613-17
Identifiers: secondary ion mass spectrometry, titanium oxide mass spectrum, iron manganese ferrite spectrum

CA079080468951
Comparison between quadrupole and magnetic mass spectrometers for use in SIM (secondary ion mass spectrometry)
Author: Ruedenauer, F. G.
Location: Oesterr. Studienges. fuer At. G.m.b.H., Vienna, Austria
Section: CA071011 Publ Class: J
Journal: Vacuum Coden: VACUAV Publ: 72 Series: 22 Issue: 11 Pages: 609-12
Identifiers: mass spectrometer comparison, secondary ion mass spectrometry, graphite secondary mass spectrum, iodine 127 selenium matric, selenium matric iodine 127, aluminum magnesium energy distribution

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 126 of 160) User4269 12sep77

CA081060327768W
Source with secondary ion emission for a mass spectrometer with double focusing
Author: Lototskii, A. G.
Location: State Sci-Res. Des. Inst. Rare Met. Ind., Moscow, USSR
Section: CA079002, CA071000 Publ Class: J
Journal: Zh. Anal. Khim. Coden: ZAKHAB Publ: 74 Series: 29 Issue: 3 Pages: 587-90 Language: Russ
Identifiers: ion source mass spectrometer, secondary ion emission mass spectrometer, copper analysis impurities mass spectrometry

CA081040182617
SIMS (secondary ion mass spectrometer) with a standard quadrupole residual gas analyzer
Author: Thomas, G. E., De Kluizenaar, E. E.
Location: Philips Res. Lab., Eindhoven, Neth.
Section: CA071011 Publ Class: J
Journal: Rev. Sci. Instrum. Coden: RSINAK Publ: 74 Series: 45 Issue: 3 Pages: 457-8
Identifiers: secondary ion mass spectroscopy, quadrupole residual gas analyzer

CA080241408737P
Composition profile of ion-plated gold film on copper analyzed by AES (Auger electron spectroscopy) and SIMS (secondary ion mass spectra) during xenon ion bombardment
Author: Narusawa, Tadashi, Komiya, Souji
Location: ULVAC Corp., Chigasaki, Japan
Section: CA079006, CA071000, CA076000 Publ Class: J
Journal: J. Vac. Sci. Technol. Coden: JVSTAL Publ: 74 Series: 11 Issue: 1 Pages: 312-16
Identifiers: concn profile sodium gold film, surface analysis gold film, Auger spectroscopy surface analysis, mass spectroscopy surface analysis, secondary ion mass spectroscopy surface, xenon ion bombardment surface analysis

CA080201139047
Surface oxidation studies of iron using the static method of secondary ion mass spectrometry (SIMS)
Author: Stumpe, E., Benninghoven, A.
Location: 1. Phys. Inst., Univ. Koeln, Cologne, Ger.
Section: CA071011, CA067000, CA055000, CA066000 Publ Class: J
Journal: Phys. Status Solidi A Coden: PSSABA Publ: 74 Series: 21 Issue: 2 Pages: 479-86
Identifiers: surface oxidn iron, secondary ion mass spectroscopy

CA080120664117
Quantitative analysis of light elements (nitrogen, carbon, and oxygen) in sputtered tantalum films by Auger electron spectroscopy and secondary ion mass spectrometry (SIMS)
Author: Morabito, J. M.
Location: Bell Teleph. Lab., Inc., Allentown, Pa.
Section: CA079006 Publ Class: J
Journal: Anal. Chem. Coden: ANCHAM Publ: 74 Series: 46 Issue: 2 Pages: 189-96
Identifiers: tantalum film analysis, Auger spectroscopy tantalum film analysis, mass spectrometry tantalum film analysis, spectrometry tantalum film analysis, nitrogen detn tantalum film analysis, oxygen detn tantalum film analysis, carbon detn tantalum film, sputtered tantalum film analysis

CA080060316660
Primary oxygen ion implantation effects on depth profiles by secondary ion emission mass spectrometry
Author: Lewis, R. K., Morabito, J. M., Tsai, J. C. C.
Location: Cameca Instrum. Inc., Elmsford, N. Y.
Section: CA071011 Publ Class: J
Journal: Appl. Phys. Lett. Coden: APPLAB Publ: 73 Series: 23 Issue: 5 Pages: 260-2
Identifiers: secondary ion mass spectroscopy, oxygen effect secondary emission, surface oxide secondary emission, silicon secondary ion emission, arsenic implanted silicon analysis

CA080020082527
Physical effects and principal possibilities of application of secondary-ion mass spectrometry SIMS
Author: Beske, H. E.
Location: Zentralinst. Anal. Chem., Kernforschungsanlage Juelich G.m.b.H., Juelich, Ger.
Section: CA071011 Publ Class: T
Journal: Ber. Kernforschungsanlage Juelich Coden: BKEJAS Publ: 73 Issue: Conf. B. Pages: 249-78 Language: Ger
Identifiers: secondary ion mass spectrometry

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 119 of 160) User4269 12sep77

CA081221429000
Analysis of tungsten surfaces in an imaging mass spectrometer by means of secondary and thermionic ions
Author: Prager, M., Gaukler, K. H.
Location: Inst. Angew. Phys., Univ. Tuebingen, Tuebingen, Ger.
Section: CA071005, CA066000 Publ Class: J
Journal: Appl. Phys. Coden: APHYCC Publ: 74 Series: 4 Issue: 4 Pages: 327-31 Language: Ger
Identifiers: tungsten ion emission, secondary ion emission tungsten, thermionic ion emission tungsten, surface tungsten ion emission

CA081201281306
Surface investigation by ion scattering and secondary ion mass spectroscopy
Author: Heiland, W.
Location: Max-Planck-Inst. Plasmaphys., EURATOM, Garching, Ger.
Section: CA071000 Publ Class: J
Journal: Electron. Fis. Apl. Coden: EFAPAO Publ: 74 Series: 17 Issue: 1-2 Pages: 151-7
Identifiers: review surface scattering spectroscopy, scattering ion surface review, mass spectroscopy surface review

CA081181126796
Mechanism of simultaneous implantation and sputtering by high energy oxygens ions during secondary ion mass spectrometry (SIMS) analysis
Author: Tsai, J. C. C., Morabito, J. M.
Location: Bell Teleph. Lab., Reading , Pa.
Section: CA071011, CA079000, CA066000 Publ Class: J
Journal: Surface Sci. Coden: SUSCAS Publ: 74 Series: 44 Issue: 1 Pages: 247-52
Identifiers: secondary ion mass spectrometry, implantation sputtering mass spectrometry, oxygen bombardment mass spectrometry

CA081140855340
Composition profiles of CVD (chemical vapor deposition) platinum and platinum silicide by Auger electron spectroscopy and secondary ion mass spectrometry
Author: Morabito, J. M., Rand, M. J.
Location: Bell Teleph. Lab. Inc., Allentown, Pa.
Section: CA079006, CA071000, CA066000 Publ Class: J
Journal: Thin Solid Films Coden: THSFAP Publ: 74 Series: 22 Issue: 3 Pages: 293-303
Identifiers: platinum thin film analysis, Auger electron spectroscopy film analysis, mass spectrometry film analysis, phosphorus detn platinum film, oxygen detn platinum film, silicon detn platinum film, film analysis impurity, silicide platinum analysis

CA081100577628
Qualitative and quantitative analysis in secondary-ion mass spectroscopy
Author: Ruedenauer, F. G., Steiger, W., Portenschlag, R.
Location: Physikinst. Reaktorzent. Seibersdorf, Oesterr. Studienges. Atomenerg. G.m.b.H., Vienna, Austria
Section: CA079000, CA071000 Publ Class: J
Journal: Mikrochim. Acta, Suppl. Coden: MKASAK Publ: 73 Series: 5, Pages: 421-51 Language: Ger
Identifiers: review secondary ion mass spectrometry

CA081100555840
Investigation of the nickel-dinitrogen oxide system by secondary ion mass spectrometry
Author: Barber, M., Vickerman, J. C.
Location: Dep. Chem., Univ. Manchester Inst. Sci. Technol., Manchester, Engl.
Section: CA071011, CA078000, CA066000 Publ Class: J
Journal: Chem. Phys. Lett. Coden: CHPLBC Publ: 74 Series: 26 Issue: 2 Pages: 277-80
Identifiers: nitrogen oxide reaction nickel, mass spectrum nickel nitrogen oxide, adsorption nitrogen oxide nickel

CA081080448536
Material analyses with a new high flux secondary mass spectrometer
Author: Pichlmayer, F.
Location: Forschungszent. Seibersdorf., Oesterr. Studienges. Atomenerg. G.m.b.H., Seibersdorf, Austria
Section: CA079002, CA071000 Publ Class: T
Journal: Ber. Oesterr. Studienges. Atomenerg. Coden: BOAEBM Publ: 74 Issue: SGAE BER. No. 2242. Pages: 9 pp. Language: Ger
Identifiers: mass spectrometer secondary ion, aluminum analysis, cesium detn silicon carbide, silicon carbide analysis cesium

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 112 of 160) User4269 12sep77

CA08208050910K
Spectroscopy in the SEM (scanning electron microscope) now includes secondary ion mass analysis
Author: Pease, David E.
Location: ETEC Corp., Mountain View, Calif.
Section: CA079000 Publ Class: J
Journal: Can. Res. Dev. Coden: CRDVAH Publ: 74 Series: 7 Issue: 5 Pages: 36-8, 40-1
Identifiers: review scanning electron microscope spectroscopy, ion analysis electron microscope review, Auger analysis electron microscope review, x ray analysis electron microscope

CA08208050539W
Quadrupole secondary ion mass spectrometry apparatus with enhanced transmission
Author: Liebl, H.
Location: Max-Planck-Inst. Plasmaphys., Garching/Munich, Ger.
Section: CA076011 Publ Class: J
Journal: Int. J. Mass Spectrom. Ion Phys. Coden: IJMIBY Publ: 74 Series: 15 Issue: 1 Pages: 116-19
Identifiers: mass spectrometer quadrupole secondary

CA08206038260R
SIMS (secondary ion mass spectrometry) spectra of organic compounds
Author: Karasek, F. W.
Location: Dep. Chem., Univ. Waterloo, Waterloo, Ont.
Section: CA080005, CA076000 Publ Class: J
Journal: Res./Dev. Coden: REDEA6 Publ: 74 Series: 25 Issue: 11 Pages: 42-4, 46
Identifiers: secondary ion mass spectrometry org

CA08204024956K
Secondary ion emission of solids studied on the mass spectrometer MI-1305
Author: Magomedov, Sh. A., Chupalaev, Ch. M., Guseinov, A. A.
Location: Inst. Fiz., Makhachkala, USSR
Section: CA076011 Publ Class: J
Journal: Prib. Tekh. Eksp. Coden: PRTEAJ Publ: 74 Issue: 5 Pages: 234-6 Language: Russ
Identifiers: secondary ion mass spectroscopy, plasma ion source mass spectrometer

CA08126177180G
Investigation of the sulfur dioxide/silver surface reaction using secondary ion mass spectrometry
Author: Barber, M., Sharpe, P., Vickerman, J. C.
Location: Dep. Chem., Univ. Manchester Inst. Sci. Technol., Manchester, Engl.
Section: CA067003 Publ Class: J
Journal: Chem. Phys. Lett. Coden: CHPLBC Publ: 74 Series: 27 Issue: 3 Pages: 436-8
Identifiers: silver surface reaction sulfur dioxide, mass spectroscopy silver sulfur dioxide

CA08122145303H
Comparison between Auger electron spectroscopy (AES) and secondary ion mass spectroscopy (SIMS) on well characterized single crystal surfaces
Author: Niehus, H., Bauer, E. G.
Location: Phys. Inst., Tech. Univ. Clausthal, Clausthal, Ger.
Section: CA079006 Publ Class: J
Journal: Electron. Fis. Apl. Coden: EFAPAC Publ: 74 Series: 17 Issue: 1-2 Pages: 53-6
Identifiers: Auger spectroscopy crystal surface analysis, electron spectroscopy crystal surface analysis, mass spectroscopy crystal surface analysis, secondary ion mass spectroscopy surface, silver detn tungsten crystal surface, copper detn tungsten crystal surface, tungsten crystal surface analysis

CA08122143050Z
Analyses of materials with a new high current secondary ion mass spectrometer
Author: Pichlmayer, F.
Location: Osterr. Studienges. Atomenerg. G.m.b.H., Vienna, Austria
Section: CA071011, CA079000 Publ Class: J
Journal: Vak.-Tech. Coden: VAKTAY Publ: 74 Series: 23 Issue: 4 Pages: 97-103 Language: Ger
Identifiers: mass spectrometer secondary ion, concn profile detn mass spectrometer, implantation profile detn mass spectrometer, ion implantation profile detn mass spectrometer, cesium implantation profile silicon carbide

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 104 of 160) User4269 12sep77

CA08224164031E
Computer simulation of atomic mixing during ion bombardment
Author: Ishitani, T., Shimizu, R.
Location: Osaka Univ., Suita, Japan
Section: CA076011, CA079000 Publ Class: J
Journal: Appl. Phys. Coden: APHYCC Publ: 75 Series: 6 Issue: 2 Pages: 241-8
Identifiers: atomic mixing ion bombardment, surface analysis ion probe, computer simulation atomic mixing, secondary ion mass spectroscopy

CA08222145532C
Adsorption of gases studied by secondary ion emission mass spectrometry
Author: Blaise, G., Bernheim, M.
Location: Lab. Phys. Solides, Univ. Paris-Sud, Orsay, Fr.
Section: CA066003, CA076000 Publ Class: J
Journal: Surf. Sci. Coden: SUSCAS Publ: 75 Series: 47 Issue: 1 Pages: 324-43
Identifiers: adsorption gas metal mass spectroscopy, oxygen adsorption metal mass spectroscopy, nickel adsorption oxygen mass spectroscopy, alloy adsorption oxygen mass spectroscopy

CA08221137728F
Atomic mixing in ion probe microanalysis
Author: Ishitani, T., Shimizu, R., Tamura, H.
Location: Osaka Univ., Suita, Japan
Section: CA016011, CA079000 Publ Class: J
Journal: Appl. Phys. Coden: APHYCC Publ: 75 Series: 6 Issue: 2 Pages: 277-9
Identifiers: atomic mixing ion microprobe, secondary ion mass spectroscopy

CA08220127985Y
Surface cleanliness of 316 L+N stainless steel studied by SIMS (secondary ion mass spectrometry) and AES (Auger electron spectroscopy)
Author: Mathewson, A. G.
Location: CERN, Geneva, Switz.
Section: CA055006 Publ Class: J
Journal: Vacuum Coden: VACUAV Publ: 74 Series: 24 Issue: 10 Pages: 505-9
Identifiers: steel surface cleaning gas discharge, argon oxygen stainless steel cleaning

CA08218118474D
Secondary ion mass spectroscopy
Author: Schillalies, Helmut
Section: CA076011 Publ Class: P
Journal: U.S. Coden: USXXAM Publ: 750107 Pages: 4 pp.
Identifiers: mass spectrometer secondary ion
Patent No: 3859226 Applic No: P 22 55 302 Date: 721111
Class: 250-282, H 01j Country: Ger.
Assignee: Leybold-Heraeus G.m.b.H. und Co. K.-G.

CA08212079370V
Mass spectrum of secondary ions knocked out from the surface of gallium arsenide single crystals by argon ions
Author: Koval, A. G., Bobkov, V. V., Klimovskii, Yu. A., Strel'chenko, S. S., Shubina, V. V., Lebedev, V. V., Fogel, Ya. M.
Location: Khar'kov. Gos. Univ. im. Gor'kogo, Kharkov, USSR
Section: CA076005 Publ Class: J
Journal: Zh. Tekh. Fiz. Coden: ZTEFA3 Publ: 74 Series: 44 Issue: 12 Pages: 2563-7 Language: Russ
Identifiers: gallium arsenide secondary ion

CA08212076296Q
Removal of a carbon impurity from platinum heatec in an oxygen atmosphere
Author: Rekova, L. P., Mozgin, V. V., Zvyagintseva, L. N., Bondarenko, V. N., Fogel, Ya. M.
Location: Fiz.-Tekh. Inst., Kharkov, USSR
Section: CA056006, CA076000 Publ Class: J
Journal: Zh. Tekh. Fiz. Coden: ZTEFA3 Publ: 74 Series: 44 Issue: 11 Pages: 2378-82 Language: Russ
Identifiers: carbon removal platinum oxygen, secondary emission platinum bombardment, mass spectrometer secondary ion emission, ionization carbon platinum bombardment, potassium emission carbon platinum

CA08210067640V
Direct comparison of Auger, SIMS (secondary ion mass spectroscopy), and proton resonance profiling for reliability studies
Author: Weisenberger, W. H., Gray, H., Hubler, G. K., Dunning, K. L., Comas, J.
Location: Nav. Res. Lab., Washington, D. C.
Section: CA079001, CA076000 Publ Class: J
Journal: Annu. Proc., Reliab. Phys. (Symp.) Coden: ARLPBI Publ: 74 Series: 12, Pages: 7-15
Identifiers: surface analysis depth profiling, Auger spectroscopy depth profiling, proton resonance depth profiling, mass spectroscopy depth profiling, secondary ion mass spectroscopy profiling, ion implantation std prepn, silicon depth profiling

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 97 of 160) User4269 12sep77

CA083020206555J
SIMS (secondary ion mass spectrometric) analysis of doped tungsten
Author: Pebler, A., Sweeney, G. G., Castle, P. M.
Location: Phys. Inorg. Chem. Dep., Westinghouse Res. Lab., Pittsburgh, Pa.
Section: CA076014, CA056000, CA075000 Publ Class: J
Journal: Metall. Trans., A Coden: MTTABN Publ: 75 Series: 6A Issue: 5 Pages: 991-6
Identifiers: mass spectrometry doped tungsten, potassium doped tungsten filament, aluminum doped tungsten filament, silicon doped tungsten filament, tungsten filament impurity analysis, impurity segregation tungsten recrystn, lamp filament doped tungsten

CA083020204850
Isotope effect of ion-electron emission
Author: Fehn, Udo
Location: Forschungsstelle Geochem., Tech. Univ. Muenchen, Munich, Ger.
Section: CA076011, CA067000 Publ Class: J
Journal: Int. J. Mass Spectrom. Ion Phys. Coden: IJMIBY Publ: 74 Series: 15 Issue: 4 Pages: 391-7
Identifiers: mass spectrometer isotope effect, isotope effect secondary emission, electron multiplier mass discrimination, beryllium isotope mass discrimination, aluminum isotope mass discrimination, nickel isotope mass discrimination

CA083020144377
Simultaneous observations of partially oxidized surfaces by AES (Auger electron spectroscopy) and SIMS (secondary ion mass spectrometry) for aluminum, silicon, titanium, vanadium, and chromium
Author: Komiya, S., Narusawa, T., Satake, T.
Location: ULVAC Corp., Chigasaki, Japan
Section: CA056005, CA066000 Publ Class: J
Journal: J. Vac. Sci. Technol. Coden: JVSTAL Publ: 75 Series: 12 Issue: 1 Pages: 361-5
Identifiers: surface oxidized metal spectroscopy, aluminum oxidized Auger spectroscopy, silicon oxidized Auger spectroscopy, titanium oxidized Auger spectroscopy, vanadium oxidized mass spectroscopy, chromium oxidized mass spectroscopy, oxygen metal mass spectroscopy

CA082261787955U
Crystal structures and their secondary ion mass spectra
Author: Buhl, R., Preisinger, A.
Location: Balzers A.-G. Hochvakuumtech. Duenne Schichten, Balzers, Liechtenstein
Section: CA075005, CA067000, CA076000, CA079000 Publ Class: J
Journal: Surf. Sci. Coden: SUSCAS Publ: 75 Series: 47 Issue: 1 Pages: 344-57
Identifiers: structure crystal mass spectroscopy, zinc sulfide structure mass spectra, calcium fluoride structure mass spectra, iron aluminate catalyst structure, secondary ion spectroscopy structure

CA082261770805V
Detection of cyanide complexes in deposited gold with SIMS (secondary ion mass spectrometry)
Author: Keil, A.
Location: Inovan-Stroebe K.-G., Birkenfeld, Ger.
Section: CA072006 Publ Class: J
Journal: Galvanotechnik Coden: GVTKAY Publ: 75 Series: 66 Issue: 1 Pages: 9-12 Language: Ger
Identifiers: gold electrodeposition carbon occlusion, cyanide complex gold electrodeposition

CA082261756125W
Study of surface processes on copper-beryllium by combined secondary ion mass spectrometry and Auger electron spectroscopy
Author: Buhl, R., Huber, W. K., Loebach, E.
Location: Balzers, A.-G. Hochvakuumtech. und Duenne Schichten, Balzers, Liechtenstein
Section: CA066003, CA056000 Publ Class: C
Journal: Proc. Int. Conf. Solid Surf., 2nd Coden: 30MDAL Publ: 74 Pages: 807-10
Publisher: Jpn. J. Appl. Phys. Address: Tokyo, Japan
Avail: Kumagai, Hiroo; Toya, Tomiyuki
Identifiers: copper beryllium surface process

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 90 of 160) User4269 12sep77

CA083121067726
Secondary ion microanalysis. Crystalline and temperature effects
Author: Castaing, R.
Location: Lab. Phys. Solides, Univ. Paris-Sud, Orsay, Fr.
Section: CA076000, CA079000 Publ Class: C
Journal: Phys. Aspects Electron Microsc. Microbeam Anal. Coden: 30TSAO Publ: 75 Pages: 355-71
Publisher: Wiley Address: New York, N. Y
Avail: Siegel, Benjamin M.; Beaman, Donald R
Identifiers: mass spectroscopy secondary review, review secondary ion microanalysis, analysis ion microprobe review, cryst effect microanalysis review, temp effect microanalysis review

CA083121036887
SIMS (secondary ion mass spectrometry) studies of the influence of the surface layers on the hydrogen penetration of tantalum foils
Author: Zuechner, H., Boes, N.
Location: Inst. Phys. Chem., Univ. Muenster, Muenster, Ger.
Section: CA066003 Publ Class: J
Journal: Z. Phys. Chem. (Frankfurt am Main) Coden: ZPCFAX
Publ: 74 Series: 93 Issue: 1-6 Pages: 65-76
Language: Ger
Identifiers: hydrogen penetration tantalum surface contamination, mass spectroscopy tantalum surface contamination

CA083100896217
Analysis of conducting and insulating surfaces by means of secondary ion mass spectrometry (SIMS)
Author: De Paz, M., Maccio, C.
Location: Ist. Sci. Fis., Univ. Genova, Genoa, Italy
Section: CA076011 Publ Class: J
Journal: Z. Naturforsch., A Coden: ZENAAU Publ: 75
Series: 30a Issue: 6-7 Pages: 831-4
Identifiers: mass spectrometry water contamination, copper surface water contamination, lithium fluoride water contamination, fluoride lithium water contamination, potassium iodide water contamination, iodide potassium water contamination

CA083080700657
Oxygen ion source for the secondary ion mass spectrometer
Author: Nishimura, Hiroshi, Okano, Jun
Location: Coll. Gen. Educ., Osaka Univ., Toyonaka, Japan
Section: CA076011 Publ Class: J
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 75
Series: 23 Issue: 1 Pages: 9-14
Identifiers: mass spectrometer oxygen ion source

CA083060497207
Composition profiles of several contaminated and cleaned surfaces of gold thick films on copper plates by Auger electron and secondary ion mass spectroscopy
Author: Komiya, S., Mizuno, M., Narusawa, T., Maeda, M., Yoshikawa, M.
Location: ULVAC Corp., Chigasaki, Japan
Section: CA071001 Publ Class: C
Journal: Proc. Int. Vac. Congr., 6th Coden: 30HFAR
Publ: 74 Pages: 363-6
Publisher: Jpn. J. Appl. Phys. Address: Tokyo, Japan
Avail: Kumagai, Hiroo; Toya, Tomiyuki
Identifiers: gold clean film copper, Tokamak clean gold surface, fusion plasma clean gold

CA083020213487
Thin film compositional analysis. Comparison of techniques
Author: Evans, Charles A., Jr.
Location: Mater. Res. Lab., Univ. Illinois, Urbana, Ill.
Section: CA079001, CA076000 Publ Class: J
Journal: J. Vac. Sci. Technol. Coden: JVSTAL Publ: 75
Series: 12 Issue: 1 Pages: 144-50
Identifiers: thin film analysis, surface analysis, secondary ion mass spectroscopy analysis, Auger spectroscopy film analysis, ion backscattering spectrometry film analysis

CA08314125549F
Surface investigation of solids by secondary ion mass spectrometry (SIMS)
Author: Benninghoven, A.
Location: I. Phys. Inst., Univ. Koeln, Cologne, Ger.
Section: CA079000, CA076000 Publ Class: J
Journal: DECHEMA-Monogr. Coden: DMDGAG Publ: 75 Series: 78 Issue: 1537-1548 Pages: 197-214
Identifiers: review secondary ion mass spectrometry, surface analysis mass spectrometry review, solid surface mass spectrometry review, metal monolayer oxidn review, sputter layer removal review

CA08314119344U
Analysis of 301 stainless steel by SIMS (secondary ion mass spectrometry)
Author: Schubert, Rudolf
Location: Bell Teleph. Lab., Inc., Columbus, Ohio
Section: CA055008 Publ Class: J
Journal: J. Vac. Sci. Technol. Coden: JVSTAL Publ: 75 Series: 12 Issue: 1 Pages: 505-8
Identifiers: stainless steel surface analysis, mass spectrometry stainless surface

CA08312107743K
Elemental analysis with Auger electron spectroscopy and secondary ion mass spectrometry
Author: Morabito, J. M.
Location: Bell Teleph. Lab., Inc., Allentown, Pa.
Section: CA079006, CA076000 Publ Class: C
Journal: Electron Ion Beam Sci. Technol., Int. Conf., 6th (See-ICE18D) Coden: 30FNA7 Publ: 74 Pages: 139-52
Publisher: Electrochem. Soc., Inc. Address: Princeton, N. J
Avail: Bakish, Robert
Identifiers: Auger spectroscopy mass spectrometry, electron spectroscopy mass spectrometry, mass spectrometry Auger spectroscopy, semiconductor analysis, tantalum film analysis dopant, silicon analysis dopant

CA08312107636C
Results on a UHV (ultrahigh vacuum) -ion microprcbe for surface and trace analysis
Author: Ruedenauer, F. G., Steiger, W.
Location: SGAE, Vienna, Austria
Section: CA079002, CA076000 Publ Class: C
Journal: Proc. Int. Vac. Congr., 6th Coden: 30MFAR Publ: 74 Pages: 383-6
Publisher: Jpn. J. Appl. Phys. Address: Tokyo, Japan
Avail: Kumagai, Hiroo; Toya, Tomiyuki
Identifiers: secondary ion mass spectrometer, ion microprobe analyzer, high vacuum ion microprobe, surface analysis ion microprobe, trace analysis ion microprobe, corrcsion product analysis microprobe, steel analysis ion microprobe

CA08312107607U
Combination of SIMS (secondary ion mass spectrometry) anc AES (Auger electron spectroscopy) for the analysis of thin films
Author: Buhl, R., Huber, W. K., Loebach, E.
Location: Balzers Aktienges. Hochvakuumtech. Duenne Schichten, Balzers, Liechtenstein
Section: CA079001 Publ Class: C
Journal: Proc. Int. Vac. Congr., 6th Coden: 30MFAR Publ: 74 Pages: 665-8
Publisher: Jpn. J. Appl. Phys. Address: Tokyo, Japan
Avail: Kumagai, Hiroo; Toya, Tomiyuki
Identifiers: secondary ion mass spectrometry, mass spectrometry Auger spectroscopy, electron Auger spectroscopy mass spectrometry, chromium layer analysis, iron chromium layer analysis, film analysis chromium iron, sputtering Auger spectroscopy mass spectrometry, aluminum substrate chromium film analysis

CA08312107025C
SIMS (secondary ion mass spectrometry) study of metals in function of the primary ion density
Author: Riedel, Miklos, Perovic, Brana
Location: Inst. Nucl. Sci. "Boris Kidric", Belgrade-Vinca, Yugoslavia
Section: CA076011 Publ Class: J
Journal: Magy. Kem. Foly. Coden: MGKFA3 Publ: 75 Series: 81 Issue: 4 Pages: 188-9 Language: Hunc
Identifiers: metal secondary ion yield, mass spectrometry secondary ion

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 75 of 160) User4269 12sep77

CA08320171546A
Modification of existing apparatus for SIMS (secondary ion mass spectroscopy) in UHV (ultrahigh vaccuum)
Author: Dowsett, M. G., King, R. M., Parker, E. H. C.
Location: Dep. Phys., City of London Polytech., London, Engl.
Section: CA076011 Publ Class: J
Journal: J. Phys. E Coden: JPSIAE Publ: 75 Series: 8 Issue: 8 Pages: 704-8
Identifiers: mass spectroscopy argon gun, quadrupole residue analyzer mass spectroscopy

CA08320171472Y
Diatomic versus atomic secondary ion emission
Author: Wittmaack, K., Staudenmaier, G.
Location: Phys.-Tech. Abt., Ges. Strahlen- und Umweltforsch. m.b.H., Neuherberg, Ger.
Section: CA076005 Publ Class: J
Journal: Appl. Phys. Lett. Coden: APPLAB Publ: 75 Series: 27 Issue: 6 Pages: 318-20
Identifiers: mass spectroscopy secondary emission, metal secondary ion emission, semiconductor secondary ion emission

CA08318157230M
Elemental analysis with Auger electron spectroscopy and secondary ion mass spectrometry
Author: Morabito, J. M.
Location: Bell Teleph. Lab., Inc., Allentown, Pa.
Section: CA079000 Publ Class: C
Journal: Proc. Symp. Mater. Sci. Aspects Thin Film Syst. Sol. Energy Convers. Coden: 31ISA8 Publ: 74 Issue: PB-239 270 Pages: 99-111
Publisher: NTIS Address: Springfield, Va
Identifiers: review Auger spectroscopy mass spectrometry, Auger electron spectroscopy review, secondary ion mass spectrometry review, surface analysis review, depth profile analysis review

CA08318156637N
Observation of solid surface by secondary ion mass spectrometry
Author: Narusawa, Tadashi, Satake, Tohru, Komiya, Souji
Location: Japan Vac. Eng. Co., Ltd., Chigasaki, Japan
Section: CA076011, CA066000 Publ Class: J
Journal: Shokubai Coden: SHKUAJ Publ: 75 Series: 17 Issue: 2 Pages: 32-9 Language: Japan
Identifiers: surface secondary ion mass spectroscopy, metal surface mass spectroscopy

CA08316140731C
Results on a UHV (ultrahigh vacuum) ion microprobe for surface and trace analysis
Author: Ruedenauer, F. G., Steiger, W.
Location: Oesterr. Studienges. Atomenerg. G.m.b.H., Vienna, Austria
Section: CA076011, CA079000 Publ Class: T
Journal: Ber. Oesterr. Studienges. Atomenerg. Coden: BOAEBM Publ: 74 Issue: SGAE BER.No. 2341. Pages: 383-6
Identifiers: mass spectrometer secondary ion, ion microprobe surface analysis

CA08316140725D
Comparative study of silicon(111), silicon oxide, silicon carbide, and silicon nitride (Si_3N_4) surfaces by secondary ion mass spectroscopy (SIMS)
Author: Benninghoven, A., Sichtermann, W., Storp, S.
Location: Phys. Inst., Univ. Muenster, Muenster, Ger.
Section: CA076011 Publ Class: J
Journal: Thin Solid Films Coden: THSFAP Publ: 75 Series: 28 Issue: 1 Pages: 59-64
Identifiers: mass spectroscopy *silicon compd. nitride* silicon mass spectroscopy, oxide silicon mass spectroscopy, carbide silicon mass spectroscopy

CA08316140572B
Secondary ion production on surfaces
Author: Higatsberger, M. J., Klaus, N.
Location: I. Phys. Inst., Univ. Wien, Vienna, Austria
Section: CA076005, CA066000 Publ Class: J
Journal: Acta Phys. Austriaca Coden: APASAP Publ: 75 Series: 41 Issue: 3-4 Pages: 269-79 Language: Ger
Identifiers: secondary ion mass spectrometer, metal secondary ion emission, surface secondary ion emission

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 68 of 160) User4269 12sep77

CA084120801255
A preliminary study of pure metal surfaces using Auger electron spectroscopy (AES), x-ray photoelectron spectroscopy (XPS) and secondary ion mass spectroscopy (SIMS)
Author: Gettings, M., Coad, J. P.
Location: Mater. Dev. Div., AERE, Harwell, Engl.
Section: CA066003, CA056000 Publ Class: J
Journal: Surf. Sci. Coden: SUSCAS Publ: 75 Series: 53 Issue: 1 Pages: 636-48
Identifiers: metal surface spectroscopy combination, Auger spectroscopy metal surface, photoelectron spectroscopy metal surface, mass spectroscopy metal surface

CA084100682300
Developments in secondary ion mass spectroscopy and applications to surface studies
Author: Benninghoven, A.
Location: Phys. Inst., Univ. Muenster, Muenster, Ger.
Section: CA076000, CA079000 Publ Class: J
Journal: Surf. Sci. Coden: SUSCAS Publ: 75 Series: 53 Issue: 1 Pages: 596-625
Identifiers: review secondary ion mass spectroscopy

CA084060381960
Computer program for peak identification in secondary ion mass spectra
Author: Steiger, W., Ruedenauer, F. G.
Location: Oesterr. Studienges. Atomenerg. G.m.b.H., Vienna, Austria
Section: CA079002, CA076000 Publ Class: T
Journal: Ber. Oesterr. Studienges. Atomenerg. Coden: BCAEBM Publ: 75 Issue: SGAE BER. NO 2421, Pages: 11 pp.
Identifiers: secondary ion mass spectrometry, mass spectrum identification computer program, aluminum mass spectrometry

CA084040254380
In-depth profile detection limits of nitrogen in gallium phosphide (and) nitrogen, oxygen, and fluorine in silicon by SIMS (secondary ion mass spectrometry) and AES (Auger electron spectroscopy)
Author: Tsai, J. C. C., Morabito, J. M.
Location: Bell Teleph. Lab. Inc., Reading, Pa.
Section: CA079006 Publ Class: C
Journal: Ion Implantation Semicond.: Sci. Technol., Proc. Int. Conf., 4th Coden: 31MKA4 Publ: 75 Pages: 115-24 Meeting Date: 74
Publisher: Plenum Address: New York, N. Y
Avail: Namba, Susumu
Identifiers: secondary ion mass spectrometry, Auger electron spectroscopy detection limit, nitrogen detection gallium phosphide, gallium phosphide analysis nitrogen, silicon analysis nitrogen oxygen fluorine, oxygen detection silicon, fluorine detection silicon, detection limit spectroscopy, mass spectrometry detection limit

CA084020113980
Model for the quantitative interpretation of secondary ion mass spectra of pure metals and dilute solid solutions
Author: Gries, W. H., Ruedenauer, F. G.
Location: Forschungszent. Seibersdorf, Oesterr. Studienges. Atomenerg. G.m.b.H., Seibersdorf, Austria
Section: CA076011, CA066000, CA079000 Publ Class: T
Journal: Ber. Oesterr. Studienges. Atomenerg. Coden: BCAEBM Publ: 75 Issue: SGAE BER.No. 2430, Pages: 31 pp.
Identifiers: secondary ion mass spectroscopy, analysis surface dilute alloy, metal secondary ion mass spectroscopy

CA083221878130
Surface analysis, methods of studying the outer atomic layers of solids
Author: Brongersma, H. H., Meijer, F., Werner, H. W.
Location: Philips Res. Lab., Eindhoven, Neth.
Section: CA079005, CA066000, CA076000 Publ Class: J
Journal: Philips Tech. Rev. Coden: PTREAN Publ: 74 Series: 34 Issue: 11-12 Pages: 357-69
Identifiers: surface analysis, imaging mass spectrometry, secondary ion mass spectrometry, noble gas ion reflection, ion induced light emission, low energy electron diffraction, Auger electron spectroscopy, x ray photoelectron spectroscopy, electron spectroscopy chem analysis, UV photoelectron spectroscopy, nickel oxide nickel surface, ellipsometry surface analysis, chromium analysis chromium oxide, nickel crystal sulfur doped, sulfur monolayer nickel surface

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 61 of 160) User4269 12sep77

CA084140983981
Study of the mass spectrum of secondary ion-ion emission from the surface of micas on an MI-1305 mass spectrometer
Author: Magomedov, Sh. A., Chupalaev, Ch. M., Guseinov, A. A.
Location: Dagestan. Filial, Inst. Fiz., Makhachkala, USSR
Section: CA076011 Publ Class: C
Journal: Vzaimodeistvie At. Chastits Tverd. Telom, Dokl. Vses. Konf., 3rd Coden: 32EKA5 Publ: 74 Series: 1, Pages: 223-5 Language: Russ
Publisher: "Naukova Dumka" Address: Kiev, USSR
Avail: Cherepin, V. T
Identifiers: mass spectrum mica

CA084140983975
Use of secondary ion-ion emission for studying the structure of laminated dielectric-semiconductor systems
Author: Litovchenko, V. G., Marchenko, R. I., Romanova, G. F.
Location: Inst. Poluprovodn., Kiev, USSR
Section: CA076011 Publ Class: C
Journal: Vzaimodeistvie At. Chastits Tverd. Telom, Dokl. Vses. Konf., 3rd Coden: 32EKA5 Publ: 74 Series: 1, Pages: 215-18 Language: Russ
Publisher: "Naukova Dumka" Address: Kiev, USSR
Avail: Cherepin, V. T
Identifiers: mass spectrum dielec semiconductor, gamma damage dielec semiconductor, laser damage dielec semiconductor

CA084140983968
Use of the method of secondary ion-ion emission for studying semiconductor materials
Author: Vasil'ev, M. A., Zhukov, A. G.
Location: Sarat. Gos. Univ., Saratov, USSR
Section: CA076011 Publ Class: C
Journal: Vzaimodeistvie At. Chastits Tverd. Telom, Dokl. Vses. Konf., 3rd Coden: 32EKA5 Publ: 74 Series: 1, Pages: 210-12 Language: Russ
Publisher: "Naukova Dumka" Address: Kiev, USSR
Avail: Cherepin, V. T
Identifiers: semiconductor mass spectroscopy, secondary ion semiconductor spectroscopy

CA084140983000
Evaluation of concentration-depth profiles by sputtering in SIMS and AES
Author: Hofmann, S.
Location: Inst. Werkstoffwiss., Max-Planck-Inst. Metallforsch., Stuttgart, Ger.
Section: CA076004, CA073000 Publ Class: J
Journal: Appl. Phys. Coden: APHYCC Publ: 76 Series: 9 Issue: 1 Pages: 59-66
Identifiers: concn depth profile sputtering, electron spectrometry concn depth, mass spectroscopy concn depth

CA084120831851
Cesium profiles in silicon and in silicon dioxide-silicon double layers as determined by SIMS (secondary ion mass spectrometry) measurements
Author: Hurrle, A., Sixt, G.
Location: Inst. Angew. Festkoerperphys., Fraunhofer-Ges., Freiburg, Ger.
Section: CA076013 Publ Class: J
Journal: Appl. Phys. Coden: APHYCC Publ: 75 Series: 8 Issue: 4 Pages: 293-302
Identifiers: cesium implantation silica silicon

CA084120831781
A new theory of SIMS at metal surfaces
Author: Cini, Michele
Location: Lab. Ric. Base, Snamprogetti S.p.A., Rome, Italy
Section: CA076011, CA066000 Publ Class: J
Journal: Surf. Sci. Coden: SUSCAS Publ: 76 Series: 54 Issue: 1 Pages: 71-8
Identifiers: mass spectroscopy secondary ion, metal surface atom ionization

CA084120829921
Determination of concentration in depth profiles of thin films with secondary ion mass spectrometry
Author: Buhl, R., Huber, W. K., Loebach, E.
Location: Hochvakuumtech. Duenne Schichten, Balzers A.-G., Balzers, Ger.
Section: CA076000, CA066000, CA079000 Publ Class: J
Journal: Vak.-Tech. Coden: VAKTAY Publ: 75 Series: 24 Issue: 7 Pages: 189-94 Language: Ger
Identifiers: review secondary ion mass spectroscopy, depth profile detn review, surface analysis mass review, film analysis mass review

CA08420144289H
Composition of binary alloys by simultaneous SIMS and AES measurements
Author: Narusawa, T., Satake, T., Komiya, S.
Location: ULVAC Corp., Chigasaki, Japan
Section: CA079006 Publ Class: J
Journal: J. Vac. Sci. Technol. Coden: JVSTAL Publ: 76 Series: 13 Issue: 1 Pages: 514-18
Identifiers: alloy analysis Auger mass spectroscopy, work function binary alloy

CA08420144152H
On the use of the Saha-Eggert equation for quantitative SIMS analysis using argon primary ions
Author: Ruedenauer, F. G., Steiger, W., Werner, H. W.
Location: Oesterr. Studienges. Atomenerg., Vienna, Austria
Section: CA079001, CA076000 Publ Class: J
Journal: Surf. Sci. Coden: SUSCAS Publ: 76 Series: 54 Issue: 3 Pages: 553-60
Identifiers: quant secondary ion mass spectroscopy, argon ion bombardment mass spectroscopy, correction equation quant mass spectroscopy

CA08420144149N
On the use of the Saha-Eggert equation for quantitative SIMS-analysis using argon primary ions
Author: Ruedenauer, F. G., Steiger, W., Werner, H.
Location: Oesterr. Studienges. Atomenerg. G.m.b.H., Vienna, Austria
Section: CA079001, CA076000 Publ Class: T
Journal: Ber. Oesterr. Studienges. Atomenerg. Coden: BOAEBM Publ: 75 Issue: SGAE 2473, Pages: 6 pp.
Identifiers: quant secondary ion mass spectroscopy, argon ion bombardment mass spectroscopy, correction equation mass spectroscopy

CA08420144140C
Surface analysis by low energy ion scattering spectroscopy and secondary ion mass spectroscopy
Author: Nelson, G. C.
Location: Chem. Mater. Charact. Dep., Sandia Lab., Albuquerque, N. Mex.
Section: CA079000, CA076000 Publ Class: J
Journal: SAMPE Q. Coden: SAMQA2 Publ: 76 Series: 7 Issue: 2 Pages: 18-21
Identifiers: review surface analysis, ion scattering spectroscopy review, mass spectroscopy review, secondary ion mass spectroscopy review, spectroscopy ion scattering review

CA08420143614Y
The application of correlated SIMS and RBS techniques to the measurement of ion implanted range profiles
Author: Fuller, D., Colligon, J. S., Williams, J. S.
Location: Dep. Electr. Eng., Univ. Salford, Salford, Engl.
Section: CA076011 Publ Class: J
Journal: Surf. Sci. Coden: SUSCAS Publ: 76 Series: 54 Issue: 3 Pages: 647-58
Identifiers: mass spectroscopy cesium implant, silicon cesium implant profile, aluminum cesium implant profile

CA08420143521R
Mass spectrum of secondary ions knocked out by a beam of argon(+) ions from a copper surface
Author: Koval, A. G., Bobkov, V. V., Klimovskii, Yu. A., Fogel, Ya. M.
Location: Khar'k. Gos. Univ. im. Gor'kogo, Kharkov, USSR
Section: CA076005 Publ Class: J
Journal: Ukr. Fiz. Zh. (Russ. Ed.) Coden: UFIZAW Publ: 76 Series: 21 Issue: 2 Pages: 236-9 Language: Russ
Identifiers: copper secondary ion emission, mass spectra copper emission

CA08419134736N
.beta.-Secondary deuterium isotope effect on the fragmentation of an oxetan molecular-ion
Author: Jones, Guilford, II, McDonnell, Lorraine P.
Location: Dep. Chem., Boston Univ., Boston, Mass.
Section: CA022002 Publ Class: J
Journal: J. Chem. Soc., Chem. Commun. Coden: JCCCAT Publ: 76 Issue: 2 Pages: 36-7
Identifiers: oxetane methylpropenyl mass spectrum, mass spectrum methylpropenyloxetane isotope, isotope effect methylalkenyloxetane fragmentation, deuterium isotope effect methylalkenyloxetane

CA08416112102A
On the problem of water adsorption on alkali halide cleavage planes, investigated by secondary ion mass spectroscopy
Author: Estel, J., Hoinkes, H., Kaarmann, H., Nahr, H., Wilsch, H.
Location: Phys. Inst., Univ. Erlangen-Nuernberg, Erlangen, Ger.
Section: CA066003, CA075000 Publ Class: J
Journal: Surf. Sci. Coden: SUSCAS Publ: 76 Series: 54 Issue: 2 Pages: 393-418
Identifiers: alkali halide cleaved adsorption water

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 45 of 160) User4269 12sep77

CA08426188350A
Empirical quantitation procedures in SIMS
Author: McHugh, J. A.
Location: Knolls At. Power Lab., Gen. Electr. Co., Schenectady, N. Y.
Section: CA076011, CA079000 Publ Class: J
Journal: Natl. Bur. Stand. (U. S.), Spec. Publ. Coden: XNBSAV Publ: 75 Series: 427, Pages: 129-34
Identifiers: secondary ion mass spectroscopy, quantitation ion mass spectroscopy

CA08426188050C
Surface analysis by secondary ion mass spectroscopy techniques
Author: Dobrott, Robert D.
Location: Mater. Charact. Lab., Texas Instrum. Inc., Dallas, Tex.
Section: CA076000, CA066000, CA079000 Publ Class: J
Journal: Natl. Bur. Stand. (U. S.), Spec. Publ. Coden: XNBSAV Publ: 76 Series: 400-23, Pages: 31-43
Identifiers: review secondary ion mass spectroscopy, surface analysis mass spectroscopy review

CA08426193961R
ESCA and SIMS as new processes to test glass and ceramics
Author: Schillalies, Helmut, Scholze, Horst
Location: Inst. Silicatforsch., Fraunhofer-Ges. Foerderung Angew. Forsch. e.V., Wuerzburg, Ger.
Section: CA057001, CA079000 Publ Class: J
Journal: Tonind.-Ztg. Keram. Rundsch. Coden: TZKRAB Publ: 76 Series: 100 Issue: 2 Pages: 46-51
Language: Ger
Identifiers: glass electron ion spectroscopy, ceramic electron ion spectroscopy, ruby electron ion spectroscopy

CA08424172759E
SIMS applications in the investigation of surfaces, thin films and sandwich structures, with special regard to quantitative analyses
Author: Ciber, J.
Location: Phys. Inst., Budapest Tech. Univ., Budapest, Hung.
Section: CA076011, CA079000, CA066000 Publ Class: J
Journal: Thin Solid Films Coden: THSFAP Publ: 76 Series: 32 Issue: 2 Pages: 295-301
Identifiers: secondary ion mass spectrometry, quant analysis SIMS

CA08424169804K
Use of ion scattering and secondary ion mass spectrometry to characterize apparent "adhesive" failure in an adhesive bond
Author: Baun, W. L.
Location: Mech. Surf. Interactions Branch, Air Force Mater. Lab., Wright-Patterson AFB, Ohio
Section: CA065001, CA037000 Publ Class: J
Journal: J. Adhes. Coden: JADNAJ Publ: 76 Series: 7 Issue: 4 Pages: 261-7
Identifiers: adhesive failure detn, ion scattering detn adhesive failure, mass spectroscopy detn adhesive failure

CA08422157126C
Investigation of electrodeposited gold layers with secondary-ion-mass-spectrometry (SIMS)
Author: Keil, Albert
Location: Inovan-Stroebe K.-G., Birkenfeld, Ger.
Section: CA072006 Publ Class: J
Journal: Electr. Contacts, Proc. Annu. Holm Semin. Coden: ECHSDG Publ: 75 Series: 21, Pages: 33-6
Identifiers: gold electroplating carbon inclusion

CA08422156182F
Studies of the surface behavior of oxide catalysts by secondary ion mass spectrometry (SIMS). 1. The surface composition of copper-containing spinel catalysts and their precursors
Author: Barber, M., Sharpe, P. K., Vickerman, J. C.
Location: Dep. Chem., Univ. Manchester Inst. Sci. Technol., Manchester, Engl.
Section: CA067001 Publ Class: J
Journal: J. Catal. Coden: JCTLA5 Publ: 76 Series: 41 Issue: 2 Pages: 240-8
Identifiers: oxide catalyst mass spectroscopy, copper spinel catalyst mass spectroscopy, magnesium copper aluminum catalyst

CA085060398250
High mass resolution secondary ion mass spectrometry
Author: Williams, Peter, Evans, C. A., Jr.
Location: Mater. Res. Lab., Univ. Illinois, Urbana, Ill.
Section: CA076011, CA079000, CA053000 Publ Class: J
Journal: Natl. Bur. Stand. (U. S.), Spec. Publ. Coden: XNBSAV Publ: 75 Series: 427, Pages: 63-8
Identifiers: high resoln mass spectroscopy, labradorite high mass resoln spectra

CA085040288720
Ion microprobe analyser
Author: Kanomata, Ichiro, Doi, Hiroshi, Tamura, Hifumi
Location: Japan
Section: CA079002, CA076000 Publ Class: P
Journal: U.S. Coden: USXXAM Publ: 751230 Pages: 13 pp.
Identifiers: ion microprobe analyzer, secondary ion mass spectrometer, iron alloy analysis ion microprobe, silicon detn ion microprobe, aluminum detn ion microprobe, chromium iron alloy analysis
Patent Nu: 3930155 Applic No: 73 7911 Date: 730119 Class: 250-309, H01J Country: Japan.
Assignee: Hitachi, Ltd.

CA085040288705
Local chemical analysis of a solid sample
Author: Castaing, Raimond, Blaise, Guy, Quettier, Roger
Location: Fr.
Section: CA079002, CA076000 Publ Class: P
Journal: Ger. Offen. Coden: GWXXBX Publ: 760115 Pages: 24 pp.
Identifiers: secondary ion mass spectrometry, ionization chamber mass spectrometer, local solid analysis mass spectrometry
Patent No: 2528596 Applic No: 74 22,722 Date: 740628 Class: G01N Country: Fr.
Assignee: Agence Nationale de Valorisation de la Recherche

CA085040280970
Application of SIMS microanalysis techniques to trace element and isotopic studies in geochemistry and cosmochemistry
Author: Lovering, J. F.
Location: Dep. Geol., Univ. Melbourne, Parkville, Aust.
Section: CA079000 Publ Class: J
Journal: Natl. Bur. Stand. (U. S.), Spec. Publ. Coden: XNBSAV Publ: 75 Series: 427, Pages: 135-78
Identifiers: review secondary ion mass spectrometry, trace element detn geochem review, isotope ratio detn geochem review geochem analysis secondary ion review, cosmochem analysis secondary ion review

CA085020106940
Twin modulated molecular beam technique and static secondary ion mass spectrometry applied to catalytic reaction studies and surface analysis
Author: Cavallini, M., Nencini, G.
Location: Lab. Ric. Base, SNAM Progetti S.p.A., Monterotondo Italy
Section: CA067001, CA066000, CA076000 Publ Class: J
Journal: Rarefied Gas Dyn., Proc. Int. Symp. Coden: PRGDAJ Publ: 74 Series: 9, Vol. 2, Pages: E10, 10 pp.
Identifiers: silver catalyst surface contamination, surface contamination silver detn, mass spectroscopy silver contamination, mol beam detn silver contamination

CA084261883640
Some effects limiting SIMS depth profile analysis and methods for improvement
Author: Lewis, Robert K.
Location: Cameca Instrum., Inc., Elmsford, N. Y.
Section: CA076011 Publ Class: J
Journal: Natl. Bur. Stand. (U. S.), Spec. Publ. Coden: XNBSAV Publ: 76 Series: 400-23, Pages: 45-59
Identifiers: secondary ion mass spectrometry

CA084261883550
Charging of insulators by ion bombardment and its minimization for secondary ion mass spectrometry (SIMS) measurements
Author: Werner, H. W., Morgan, A. E.
Location: Philips Res. Lab., Eindhoven, Neth.
Section: CA076011 Publ Class: J
Journal: J. Appl. Phys. Coden: JAPIAU Publ: 76 Series: 47 Issue: 4 Pages: 1232-42
Identifiers: mass spectrometry insulator, insulator charging ion bombardment

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 31 of 160) User4269 12sep77

CA085100715568
Comparison of auger electron spectroscopy (AES) and secondary ion mass spectrometry (SIMS)
Author: Morabito, J. M.
Location: Bell Teleph. Lab., Inc., Allentown, Pa.
Section: CA079000 Publ Class: J
Journal: Natl. Bur. Stand. (U. S.), Spec. Publ. Coden: XNBSAV Publ: 75 Series: 427, Pages: 191-224
Identifiers: review secondary ion mess spectrometry, Auger electron spectroscopic analysis review, surface analysis spectrometry review

CA08508056245F
Electronic optical apparatus for ion scattering spectrometry and mass spectrometry of secondary ions
Location: Ger.
Section: CA079002, CA076000 Publ Class: P
Journal: Fr. Demande Coden: FRXXBL Publ: 751024 Pages: 8 pp.
Identifiers: surface analysis app, spectrometer mass ion scattering, secondary ion mass spectrometer, ion scattering spectrometer surface analysis
Patent No: 2266166 Applic No: P 24 14 221.0 Date: 740325 Class: G01N, H01J Country: Ger.
Assignee: Max-Planck-Gesellschaft zur Forderung der Wissenschaften e.V.

CA08508056095G
A high mass resolution capability for the Cameca ion analyzer
Author: Lewis, R. K., Vastel, J.
Location: Cameca Instrum., Inc., Elmsford, N. Y.
Section: CA079002, CA076000 Publ Class: C
Journal: Tutorial Proc., Annu. Conf. - Microbeam Anal. Soc., 9th Coden: 32QEAD Publ: 74 Pages: No. 50, 4 pp.
Publisher: Met. Mater. Sci. Dep., Lehigh Univ. Address: Bethlehem, Pa
Identifiers: Cameca ion analyzer high resolution, secondary ion mass spectrometer

CA08508056064W
The use of Auger electron spectroscopy and secondary ion mass spectrometry in the microelectronic technology
Author: Morabito, J. M., Lewis, R. K.
Location: Bell Lab., Allentown, Pa.
Section: CA079000, CA076000 Publ Class: J
Journal: Methods Phenom.: Their Appl. Sci. Technol. Coden: MPTTDK Publ: 75 Series: 1 Issue: Methods Surf. Anal. Pages: 279-328
Identifiers: review spectrometry microelectronic material, Auger electron spectrometry review, secondary ion mass spectrometry review, electronics analysis spectroscopy review

CA08508056045R
SIMS (secondary ion mass spectroscopy), a new method for the analysis of surfaces and thin layers
Author: Kucera, Jaroslav
Location: Inst. Sci. Instrum., Czech. Acad. Sci., Brno, Czech.
Section: CA079000, CA076000 Publ Class: J
Journal: Chem. Listy Coden: CHLSAC Publ: 75 Series: 69 Issue: 11 Pages: 1142-7 Language: Czech
Identifiers: review surface analysis mass spectroscopy, secondary ion mass spectroscopy review, thin layer mass spectroscopy review, layer analysis mass spectroscopy review

CA08508055304N
Surface ionization - "plasma" in disguise
Author: Coles, John N.
Location: Ion-Microprobe Unit, Nat. Environ. Res. Counc., Cambridge, Engl.
Section: CA076005 Publ Class: J
Journal: Surf. Sci. Coden: SUSCAS Publ: 76 Series: 55 Issue: 2 Pages: 721-4
Identifiers: surface ionization plasma secondary emission, mass spectroscopy secondary ion

CA08506040383P
A comparison of the techniques for silicon surface analysis
Author: Evans, Charles A., Jr.
Location: Mater. Res. Lab., Univ. Illinois, Urbana, Ill.
Section: CA079006, CA066000 Publ Class: J
Journal: Natl. Bur. Stand. (U. S.), Spec. Publ. Coden: XNBSAV Publ: 76 Series: 400-23, Pages: 219-32
Identifiers: silicon surface analysis spectrometry, Auger electron spectroscopy silicon analysis, ESCA silicon surface analysis, ion scattering spectrometry silicon analysis, backscattering spectrometry silicon analysis, secondary ion mass spectrometry silicon, mass spectrometry silicon surface analysis

CA085120867266F
Ion scattering spectrometry and secondary ion mass spectroscopy: two complimentary techniques
Author: Leys, J. A., McKinney, J. T.
Location: Cent. Res. Lab., 3M Co., St. Paul, Minn.
Section: CA079006 Publ Class: C
Journal: Tutorial Proc., Annu. Conf. - Microbeam Anal. Soc., 9th Coden: 32QEAD Publ: 74 Pages: No. 52, 5 pp.
Publisher: Met. Mater. Sci. Dep., Lehigh Univ. Address: Bethlehem, Pa
Identifiers: surface analysis spectrometry, copper foil chromate treated analysis, aluminum surface analysis spectrometry, cobalt oxide analysis spectrometry, mass spectroscopy surface analysis, secondary ion mass spectroscopy surface, ion scattering spectrometry surface analysis

CA085120866199Y
Use of an electron gun in the study of insulating materials by means of an ionic analyzer
Author: Blanchard, B., Carrier, P., Hilleret, N., Marguerite, J. L., Rocco, J. C.
Location: CEN, Grenoble, Fr.
Section: CA079002, CA076000, CA077000 Publ Class: J
Journal: Analusis Coden: ANLSCY Publ: 76 Series: 4 Issue: 4 Pages: 180-4 Language: Fr
Identifiers: insulating material analysis mass spectrometry, surface charge compensation insulating material, silica analysis mass spectroscopy, garnet analysis mass spectroscopy, electron gun surface charge neutralization, secondary ion mass spectroscopy surface

CA085120866019M
Study of electron beam effects on surfaces using x-ray photoelectron spectroscopy (XPS) and secondary ion mass spectroscopy (SIMS)
Author: Gettings, M., Coad, J. P.
Location: AERE, U. K. At. Energy Auth., Harwell/Oxfordshire, Engl.
Section: CA079001 Publ Class: T
Journal: U. K. At. Energy Res. Establ., Rep. Coden: UKRGAL Publ: 76 Issue: AERE-R 8288. Pages: 10 pp.
Identifiers: electron beam effect surface analysis, x ray photoelectron spectroscopy, secondary ion mass spectroscopy, Auger electron spectroscopy

CA085120865609X
Surface analysis by low-energy ion scattering spectroscopy and secondary ion mass spectroscopy
Author: Nelson, G. C.
Location: Sandia Lab., Albuquerque, N. Mex.
Section: CA079000, CA056000, CA066000, CA076000 Publ Class: J
Journal: Natl. SAMPE Tech. Conf. Coden: SAMPCZ Publ: 75 Series: 7 Issue: Mater. Rev. '75 Pages: 364-73
Identifiers: review ion scattering mass spectroscopy, surface analysis spectroscopy review

CA085120859239F
Analysis of implanted layers by means of secondary ion mass spectrometry (SIMS)
Author: Werner, Helmut W.
Location: Philips Res. Lab., Eindhoven, Neth.
Section: CA076000, CA079000 Publ Class: J
Journal: Acta Electron. Coden: ACELAZ Publ: 76 Series: 19 Issue: 1 Pages: 53-66
Identifiers: review implanted semiconductor profiling, secondary ion spectrometry implanted review, mass spectrometry implanted review

CA085120817199W
Determination of carbon and nitrogen profiles in type 316 stainless steel using a secondary ion mass spectrometer
Author: Bagnall, C., Sweeney, G. G., Shiels, S. A.
Location: Adv. React. Div., Westinghouse Electr. Corp., Madison, Pa.
Section: CA055008 Publ Class: J
Journal: Microstruct. Sci. Coden: MSSCDJ Publ: 75 Series: 3, Pt. B, Pages: 601-21
Identifiers: stainless steel interstitial distribution, carbon distribution stainless steel, nitrogen distribution stainless steel, sodium carburization stainless steel

CA085100715909H
Evaluation of the local thermal equilibrium model for quantitative secondary ion mass spectrometric analysis
Author: Simons, David S., Baker, Judith E., Evans, Charles A., Jr.
Location: Mater. Res. Lab., Univ. Illinois, Urbana, Ill.
Section: CA079001, CA076000 Publ Class: J
Journal: Anal. Chem. Coden: ANCHAM Publ: 76 Series: 48 Issue: 9 Pages: 1341-8
Identifiers: thermal equil mass spectroscopy, equil local thermal mass spectroscopy, secondary ion mass spectroscopy quant, computer program mass spectroscopy

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 16 of 160) User4269 12sep77

CA085181357106
Simultaneous ion-scattering and secondary-ion mass spectrometry
Author: Vasile, Michael J., Malm, Donald L.
Location: Bell Lab., Murray Hill, N. J.
Section: CA076011, CA079000 Publ Class: J
Journal: Int. J. Mass Spectrom. Ion Phys. Coden: IJMIBY Publ: 76 Series: 21 Issue: 1-2 Pages: 145-57
Identifiers: spectrometer ion scattering mass spectroscopy

CA085181355247
Cluster induced secondary electron emission
Author: Staudenmaier, G., Hofer, W. O., Liebl, H.
Location: Max-Planck Inst. Plasmaphys., Garching/Munich, Ger.
Section: CA076005 Publ Class: J
Journal: Int. J. Mass Spectrom. Ion Phys. Coden: IJMIBY Publ: 76 Series: 21 Issue: 1-2 Pages: 103-12
Identifiers: cluster ion secondary electron emission, mass spectroscopy cluster ion

CA085181350836
Secondary-ion mass spectrometry, a new process for solid state analysis
Author: Maul, Johann L.
Location: Ger.
Section: CA076000, CA079000, CA080000 Publ Class: J
Journal: Chem.-Tech. (Heidelberg) Coden: CMTKAT Publ: 76 Series: 5 Issue: 8 Pages: 317-19 Language: Ger
Identifiers: review secondary ion mass spectroscopy

CA085181289976
Studies on copper-nickel and copper-aluminum systems with secondary ion mass spectrometry (SIMS)
Author: Rodriguez-Murcia, H., Beske, H. E.
Location: Zentralabt. Chem. Anal., Kernforschungsanlage Juelich G.m.b.H., Juelich, Ger.
Section: CA056007, CA076000 Publ Class: T
Journal: Ber. Kernforschungsanlage Juelich Coden: BKEJAS Publ: 76 Issue: Jul-1292, Pages: 92 pp. Language: Ger
Identifiers: copper aluminum ionization ratio, nickel copper ionization ratio, secondary ion mass spectroscopy

CA085161154871
The oxidation of aluminum studied by SIMS at low energies
Author: Dawson, P. H.
Location: Div. Phys., Natl. Res. Counc. Canada, Ottawa, Ont.
Section: CA076011, CA066000 Publ Class: J
Journal: Surf. Sci. Coden: SUSCAS Publ: 76 Series: 57 Issue: 1 Pages: 229-40
Identifiers: aluminum oxidn mass spectroscopy

CA085161154826
A study of germanium/silicon dioxide MIS structures by the use of secondary ion mass spectrometry
Author: Wang, K. L., Storms, H. A.
Location: Gen. Electr. Corp. Res. Dev. Cent., Schenectady, N. Y.
Section: CA076011 Publ Class: J
Journal: J. Appl. Phys. Coden: JAPIAU Publ: 76 Series: 47 Issue: 6 Pages: 2539-49
Identifiers: mass spectroscopy MIS structure, germanium silica structure mass spectroscopy

CA085141032030
Methods for obtaining in-depth data in surface analysis
Author: Holm, R., Storp, S.
Location: Ber. Angew. Phys., Bayer A.-G., Leverkusen, Ger.
Section: CA079000 Publ Class: J
Journal: Vak.-Tech. Coden: VAKTAY Publ: 76 Series: 25 Issue: 3 Pages: 73-8 Language: Ger
Identifiers: depth profile surface analysis review, Auger electron spectroscopy depth review, secondary ion mass spectrometry review, ESCA depth profile review, sputtering depth analysis review

CA085140993057
Measurement of momentum accommodation coefficients on surfaces characterized by Auger spectroscopy, SIMS and LEED
Author: Seidl, M., Steinheil, E.
Location: Dornier Syst. G.m.b.H., Friedrichshafen, Ger.
Section: CA065001, CA047000, CA066000, CA076000 Publ Class: J
Journal: Rarefied Gas Dyn., Proc. Int. Symp. Coden: PRGDAJ Publ: 74 Series: 9, Vol. 2, Pages: E9, 12 pp.
Identifiers: accommodation coeff detn app, beam atomic mol scattering surface, momentum transfer atomic beam surface, helium momentum accommodation coeff, shellac accommodation coeff helium, copper accommodation coeff helium, tungsten accommodation coeff helium, sapphire accommodation coeff helium, glass accommodation coeff helium, gold accommodation coeff helium

DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 9 of 160) User4269 12sep77

CA08522171057H
Secondary ion mass spectrometry. (II). Fundamental problems in the application of SIMS
Author: Okano, Jun
Location: Coll. Gen. Educ., Osaka Univ., Toyonaka, Japan
Section: CA079000, CA076000 Publ Class: J
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 76 Series: 24 Issue: 1 Pages: 1-18 Language: Japan
Identifiers: secondary ion mass spectrometry review, analysis mass spectrometry review

CA08522169792A
New method for studying processes occurring during deposition of thin-film coatings on a metallic substrate by evaporation in vacuo
Author: Abramenkov, A. D., Fogel, Ya. M.
Location: USSR
Section: CA075001, CA076000 Publ Class: J
Journal: Vopr. At. Nauki Tekh., Ser.: Fiz. Vys. Energ. At. Yadra Coden: VANYDX Publ: 73 Series: 7, Pages: 98-9 Language: Russ
Identifiers: film deposition vacuum metal, mass spectroscopy film deposition, secondary ion study film deposition

CA08522164957Y
Surface analysis of 6061 and 7050 aluminum alloys after conditioning by chemical treatment
Author: McDevitt, Neil T., Baun, William L., Solomon, James S.
Location: Air Force Mater. Lab., Air Force Syst. Command, Wright-Patterson AFB, Ohio
Section: CA056005, CA079000, CA073000 Publ Class: T
Journal: U. S. Air Force Syst. Command, Air Force Mater. Lab., Tech. Rep., AFML Coden: XAMFAO Publ: 76 Issue: AFML-TR-76-13, Pages: 37 pp.
Identifiers: aluminum alloy surface compn, Auger electron spectroscopy aluminum, ion scattering spectroscopy aluminum, secondary ion mass spectroscopy aluminum

CA08520152725H
On the abundance of molecular ions in secondary ion mass spectrometry
Author: Morgan, A. E., Werner, H. W.
Location: Philips Res. Lab., Eindhoven, Neth.
Section: CA076011 Publ Class: J
Journal: Appl. Phys. Coden: APHYCC Publ: 76 Series: 11 Issue: 2 Pages: 193-5
Identifiers: mass spectroscopy mol ion, secondary ion mass spectroscopy, oxygen mass spectroscopy mol ion

CA08520152722E
Surface analysis of insulating materials by secondary ion mass spectrometry (SIMS)
Author: Mueller, G.
Location: Bayer A.-G., Krefeld-Uerdingen, Ger.
Section: CA076011, CA079000 Publ Class: J
Journal: Appl. Phys. Coden: APHYCC Publ: 76 Series: 10 Issue: 4 Pages: 317-24
Identifiers: mass spectrometry secondary ion, electron charge compensation mass spectrometry, insulator mass spectrometry charge, titania mass spectrometry ion, oxide titanium mass spectrometry, surface mass spectrometry charge

CA08518136695U
Quantitative interpretation of mass spectra of secondary ion emission in a determination of the composition of solids
Author: Lototskii, A. G., Gimel'farb, F. A.
Location: State Sci.-Res. Des. Inst. Rare Met. Ind., Moscow, USSR
Section: CA079006, CA076000 Publ Class: J
Journal: Zh. Anal. Khim. Coden: ZAKHAB Publ: 76 Series: 31 Issue: 3 Pages: 433-9 Language: Russ
Identifiers: mass spectroscopy quant analysis, secondary ion mass spectroscopy, metal analysis mass spectroscopy, dielec analysis mass spectroscopy, semiconductor analysis mass spectroscopy

CA08520153508B
Some fundamental factors in quantitative analysis by ion microanalyzer
Author: Someno, Mayumi, Saito, Hiroshi, Kobayashi, Mutsuhiro
Location: Fac. Eng., Tokyo Inst. Technol., Tokyo, Japan
Section: CA079006, CA076000 Publ Class: J
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 76 Series: 24 Issue: 2 Pages: 173-80 Language: Japan
Identifiers: deuterium detn titanium iron alloy, titanium iron alloy analysis deuterium, secondary ion energy microanalysis, mass spectroscopy secondary ion

Print 36/2/1-160
DIALOG File3: CA CONDENS 72-76 (COPR. Am. Chem. Soc.) (Item 1 of 160) User4269 12sep77

CA085262008800
Secondary ion mass spectrometry (SIMS). A technique for studying surface reactivity
Author: Barber, M., Vickerman, J. C.
Location: Univ. Manchester Inst. Sci. Technol., Manchester, Engl.
Section: CA076000, CA066000 Publ Class: J
Journal: Surf. Defect Prop. Solids Coden: SPSDCW Publ: 76 Series: 5, Pages: 162-88
Identifiers: review mass spectrometry surface reactivity, secondary ion mass spectrometry

CA08525193065M
Secondary-ion emission of amino acids
Author: Benninghoven, A., Jaspers, D., Sichtermann, W.
Location: Phys. Inst., Univ. Muenster, Muenster, Ger.
Section: CA034002, CA022000 Publ Class: J
Journal: Appl. Phys. Coden: APHYCC Publ: 76 Series: 11 Issue: 1 Pages: 35-9
Identifiers: amino acid secondary ion emission, mass spectroscopy secondary ion amino acid

CA08524185523U
Detection of SiO_2^- ions from silica-silicon interface by means of SIMS
Author: Nakamura, Kazumitsu, Hirose, Hiroshi, Shibata, Atsushi, Tamura, Hifumi
Location: Naka Works, Hitachi Ltd., Katsuta, Japan
Section: CA076011 Publ Class: J
Journal: Jpn. J. Appl. Phys. Coden: JJAPA5 Publ: 76 Series: 15 Issue: 10 Pages: 2007-8
Identifiers: silica silicon interface ion, mass spectroscopy silica interface

CA08524185147Z
Auger and SIMS spectrometry in microelectronics
Author: Queirolo, G.
Location: SGS-ATES, Milan, Italy
Section: CA076000 Publ Class: J
Journal: Energ. Nucl. (Milan) Coden: ENNLAV Publ: 76 Series: 23 Issue: 6 Pages: 332-45 Language: Ital
Identifiers: review microelectronics Auger mass spectroscopy, electronics Auger mass spectroscopy review

CA08522171124C
See the surface in another 'light'
Author: Riach, Gerald E., Riggs, William M.
Location: Phys. Electron. Ind. Inc., Eden Prairie, Minn.
Section: CA079005, CA073000, CA076000 Publ Class: J
Journal: Ind. Res. Coden: IDRSAC Publ: 76 Series: 18 Issue: 9 Pages: 74-8
Identifiers: surface analysis multiple spectrometric, ESCA Auger electron spectrometry, scanning Auger microprobe ESCA, UV photoelectron spectroscopy ESCA, secondary ion mass spectrometry, magnesium fluoride conversion oxide, molybdenum oxide catalyst poisoning

DIALOG File4: CA CONDENS/CASIA 77- /VOL87(08) (COPR. Am. Chem. Soc.) (Item 66 of 71) User4269 12sep77

CA08604025614S
New method to analyze surface and solid compositions using a molecular beam
Author: Marechal, M., Devienne, M. F.
Location: Soc. Veeco, Gometz-le-Chatel, Fr.
Section: CA079006, CA076XXX Publ Class: JOURNAL
Journal: Vide Coden: VIDEAA Publ: 74 Series: 171, Suppl. Issue: tron. Ioniques, Congr. Int. AVISEM, 4th, 1974 Pages: 248-55 Language: Fr
Identifiers: mol beam surface solid analysis, aluminum alloy film mass spectrometer, platinum ribbon mass spectrometer, secondary ion emission mass spectroscopy

CA08602011482K
Use of a MKh-1303 mass spectrometer for analyzing solid substances by secondary ionic emission
Author: Larin, N. V., Andon, V. M.
Location: USSR
Section: CA079006, CA076XXX Publ Class: JOURNAL
Journal: Tr. Khim. Khim. Tekhnol. Coden: TKKTAE Publ: 75 Issue: 1 Pages: 35-7 Language: Russ
Identifiers: secondary ion mass spectrometry, mass spectroscopy silicon iron magnesium, silicon analysis mass spectrometry, iron analysis mass spectrometry, magnesium analysis mass spectrometry

CA08602011173K
Applications of ISS/SIMS (ion scattering spectrometry/secondary ion mass spectrometry) for surface analysis
Author: Kashar, Lawrence
Location: Scanning Electron Anal. Lab., Inc., Los Angeles, Calif.
Section: CA076011, CA079XXX, CA066XXX Publ Class: CONF PROC
Journal: Proc. - Adv. Tech. Failure Anal. Symp. Coden: 34GOAD Publ: 76 Pages: 13-17
Publisher: IEEE Address: New York, N. Y
Identifiers: electronics surface analysis, ion scattering surface analysis, mass spectrometry secondary ion, circuit semiconductor surface analysis

CA08602009677J
Ion-solid interactions. Application of Auger spectrometry and secondary ion spectrometry to study specimens undergoing thermal heating cycles and hydrogen plasma treatment
Author: Dagoury, G., Vigner, D., Rousseau, J.
Location: Div. Chim., CEN-Saclay, Gif-sur-Yvette, Fr.
Section: CA071001, CA066XXX Publ Class: JOURNAL
Journal: Vide Coden: VIDEAA Publ: 76 Series: 182, Suppl. Issue: sation Cathod. Ses Appl., 2nd, 1976 Pages: 205-17 Language: Fr
Identifiers: ion solid interaction plasma, Auger spectrometry hydrogen plasma, thermal cycle hydrogen plasma, tokamak plasma spectrometry, wall effect fusion reactor

CA08602008748W
Secondary ion mass spectrometry study of solid state diffusion
Author: Seran, J. J.
Location: Univ. Paris-6, Paris, Fr.
Section: CA065001 Publ Class: TECH REP
Journal: Report Coden: C2REPU Publ: 76 Issue: CEA-R-4717, Pages: 74 pp. Language: Fr
Citation: INIS Atomindex 1976, 7(17), Abstr. No. 259817
Avail: INIS
Identifiers: secondary ion mass spectrometry diffusion, nickel diffusion copper mass spectroscopy

CA08602005933S
Secondary-emission mass spectrometric determination of the microstructure of fluorine-containing polymers
Author: Tantsyrev, G. D., Kleimenov, N. A., Povolotskaya, M. I., Bravaya, N. M.
Location: Inst. Khim. Fiz., Moscow, USSR
Section: CA035005 Publ Class: JOURNAL
Journal: Vysokomol. Soedin., Ser. A Coden: VYSAAF Publ: 76 Series: 18 Issue: 10 Pages: 2218-22 Language: Russ
Identifiers: secondary ion mass spectroscopy, structure fluorine polymer, polychlorotrifluoroethylene structure mass spectroscopy, polyvinylidene fluoride structure, ethylene tetrafluoroethylee copolymer structure

DIALOG File4: CA CONDENS/CASIA 77- /VOL87(08) (COPR. Am. Chem. Soc.) (Item 59 of 71) User4269 12sep77

CA08610062568A
A study of barrier film growth on aluminum in solutions of film-promoting and aggressive ions using secondary ion mass spectrometry
Author: Abd Rabbo, M. F., Richardson, J. A., Wood, G. C.
Location: Corrosion Protect. Cent., Univ. Manchester Inst. Sci. Technol., Manchester, Engl.
Section: CA072004, CA076XXX Publ Class: JOURNAL
Journal: Corros. Sci. Coden: CRRSAA Publ: 76 Series: 16 Issue: 10 Pages: 689-702
Identifiers: aluminum barrier film growth, mass spectroscopy alumina film, phosphate aluminum barrier film, chromate aluminum barrier film

CA08610062167U
Ion microprobe studies of surface effects of materials related to fission and fusion reactors
Author: Johnson, Carl E., Steidl, David V.
Location: Chem. Eng. Div., Argonne Natl. Lab., Argonne, Ill.
Section: CA071001 Publ Class: JOURNAL
Journal: Adv. Chem. Ser. Coden: ADCSAJ Publ: 76 Series: 158 Issue: Radiat. Eff. Solid Surf., Symp., 1975 Pages: 349-65
Identifiers: ion microprobe fusion reactor material, fuel cladding ion microprobe

CA08608050256J
Ion microprobe mass analyzer
Author: Stuckey, Wayne
Location: Aerosp. Corp., El Segundo, Calif.
Section: CA079006 Publ Class: CONF PROC
Journal: Proc. - Adv. Tech. Failure Anal. Symp. Coden: 34GQAD Publ: 76 Pages: 10-12
Publisher: IEEE Address: New York, N. Y
Identifiers: ion microprobe mass analyzer, microprobe ion mass analyzer, electronics analysis ion microprobe, secondary ion mass spectra alumina, relay depth profile analysis

CA08608050242B
Some applications of ion microprobe analysis to problems in semiconductor devices
Author: Doi, Hiroshi, Kanomata, Ichiro, Sakudo, Noriyuki
Location: Cent. Res. Lab., Hitachi Ltd., Tokyo, Japan
Section: CA079006, CA076XXX Publ Class: JOURNAL
Journal: Proc. Conf. Solid State Devices Coden: PCSDDB Publ: 75 Series: 7, Pages: 71-8
Identifiers: silicon transistor analysis ion microprobe, secondary ion mass spectroscopy microprobe, oxygen reagent ion microprobe analysis, molybdenum analysis ion microprobe, aluminum analysis ion microprobe, epitaxy silicon analysis ion microprobe, arsenic detn silicon, boron detn silicon, phosphorus detn silicon, antimony detn silicon

CA08608050159E
New possibilities in the treatment of surface and thin-layer problems
Author: Seidl, Max, Ploq, Carsten, Scherber, Werner
Location: Dornier Syst. G.m.b.H., Friedrichshafen, Ger.
Section: CA079001, CA052XXX Publ Class: JOURNAL
Journal: Metalloberflaeche Coden: MOFEAV Publ: 76 Series: 30 Issue: 10 Pages: 479-83 Language: Ger
Identifiers: Auger electron spectroscopic analysis, scanning Auger microprobe analysis, secondary ion mass spectroscopic analysis, cyanide detection gold, vanadium oxide detection solar absorber, beryllium oxide detection weld, copper oxide detection weld, surface treatment analysis spectroscopy, alloy surface analysis spectroscopy

CA08608050149B
Microanalysis - past, present, future
Author: Wittry, David B.
Location: Dep. Mater. Sci., Univ. South. California, Los Angeles, Calif.
Section: CA079000, CA073XXX Publ Class: CONF PROC
Journal: Proc. - Adv. Tech. Failure Anal. Symp. Coden: 34GQAD Publ: 76 Pages: 1-8
Publisher: IEEE Address: New York, N. Y
Identifiers: review microanalytical spectrometry, secondary ion mass spectrometry review, x ray fluorescence spectrometry review, electron microprobe analysis review, Auger electron spectroscopy review, transmission electron microscopy review, ESCA review

CA08608050148A
New physical methods of material microanalysis
Author: Fuchs, E.
Location: Anal. Abt., Siemens A.-G., Munich, Ger.
Section: CA079000, CA075XXX, CA076XXX Publ Class: JOURNAL
Journal: Phys. Unserer Zeit Coden: PHUZAH Publ: 76 Series: 7 Issue: 5 Pages: 136-46 Language: Ger
Identifiers: review phys microanalysis electronics technol, x ray microanalysis review, atomic absorption microanalysis review, mass spectrometry microanalysis review, neutron activation microanalysis review, autoradiog microanalysis review, electron microprobe analysis review, secondary ion mass spectrometry review

CA08612082513G
Study of the oxidation of gallium arsenide by secondary ion mass spectrometry
Author: Koval, A. G., Mal'nikov, V. N., Man'kovskii, N. K., Strel'chenko, S. S., Matyash, A. A., Lebedev, V. V.
Location: USSR
Section: CA076013 Publ Class: JOURNAL
Journal: v sb., Vzaimodeistvie Atom. Chastits s Tverd. Telom. IV Vses. Konf., 1976 Coden: D4JOU5 Publ: 76 Issue: Ch. 3 Pages: 33-6 Language: Russ
Citation: Ref. Zh., Khim. 1976, Abstr. No. 228942
Identifiers: gallium arsenide oxidn mass spectrometry

CA08612077323R
A study of the effects of inhibitive and aggressive ions on oxide-coated aluminum using secondary ion mass spectrometry
Author: Abd Rabbo, M. F., Richardson, J. A., Wood, G. C., Jackson, C. K.
Location: Corrosion Protect. Cent., Univ. Manchester Inst. Sci. Technol., Manchester, Engl.
Section: CA056008, CA076XXX Publ Class: JOURNAL
Journal: Corros. Sci. Coden: CRRSAA Publ: 76 Series: 16 Issue: 10 Pages: 677-87
Identifiers: aluminum oxide coated corrosion, mass spectroscopy corrosion aluminum

CA08610064946W
Surface analysis in a SEM with SIMS imaging
Author: Leys, J. A., McKinney, J. T.
Location: 3M Cent. Res. Lab., St. Paul, Minn.
Section: CA079005, CA076XXX Publ Class: JOURNAL
Journal: Scanning Electron Microsc. Coden: SEMYBL Publ: 76 Series: 9, Pt. 1, Pages: 231-8
Identifiers: secondary ion imaging electron microscopy, mass spectrometry scanning electron microscopy

CA08610064439H
Detection of aluminum and magnesium contamination in sputtered platinum films by Auger electron spectroscopy and secondary ion mass spectrometry
Author: Andrews, J. M., Morabito, J. M.
Location: Bell Teleph. Lab. Inc., Murray Hill, N. J.
Section: CA076013 Publ Class: JOURNAL
Journal: Thin Solid Films Coden: THSFAP Publ: 76 Series: 37 Issue: 3 Pages: 357-72
Identifiers: platinum sputtered film contamination, magnesium contamination platinum film, aluminum contamination platinum film, integrated circuit platinum film, Auger electron spectroscopy platinum film, mass spectroscopy platinum film

CA08610064378N
A simple electronic aperture for rastered-beam depth profiles
Author: Williams, Peter, Evans, Charles A., Jr.
Location: Mater. Res. Lab., Univ. Illinois, Urbana, Ill.
Section: CA076011 Publ Class: JOURNAL
Journal: Int. J. Mass Spectrom. Ion Phys. Coden: IJMIBY Publ: 76 Series: 22 Issue: 3-4 Pages: 327-31
Identifiers: mass spectroscopy depth profiling, spectrometry ion scattering depth profiling

CA08610064376K
Study of an iodine discharge in a duoplasmatron
Author: Liebl, H., Harrison, W. W.
Location: Max-Planck-Inst. Plasmaphys., Garching, Ger.
Section: CA076011 Publ Class: JOURNAL
Journal: Int. J. Mass Spectrom. Ion Phys. Coden: IJMIBY Publ: 76 Series: 22 Issue: 3-4 Pages: 237-46
Identifiers: iodine discharge duoplasmatron mass spectroscopy, secondary ion mass spectroscopy iodine

CA08610064374H
A mass and energy spectrometer for secondary ion analysis
Author: Bayly, A. R., MacDonald, R. J.
Location: Dep. Phys., Aust. Natl. Univ., Canberra, Aust.
Section: CA076011 Publ Class: JOURNAL
Journal: J. Phys. E Coden: JPSIAE Publ: 77 Series: 10 Issue: 1 Pages: 79-85
Identifiers: mass spectrometer secondary ion analysis, energy spectrometer secondary ion analysis, secondary ion analysis *app*

DIALOG File4: CA CONDENS/CASIA 77- /VOL87(08) (COPR. Am. Chem. Soc.) (Item 44 of 71) User4269 12sep77

CA08616109645R
Study of oxide coatings on the surface of increased-purity iron using mass spectrometry of secondary ions
Author: Bobkov, V. V., Koval, A. G., Klimovskii, Yu. A.
Location: USSR
Section: CA055006, CA079XXX Publ Class: JOURNAL
Journal: Vzaimodeistvie Atom. Chastits s Tverd. Telom. IV Vses. Konf., 1976 Coden: D5JOUC Publ: 76 Issue: Ch. 3
Pages: 67-70 Language: Russ
Citation: Ref. Zh., Fiz., E 1976, Abstr. No. 11E420
Identifiers: oxide coating iron analysis

CA08614100363Q
High-sensitivity depth profiling of arsenic and phosphorus in silicon by means of SIMS
Author: Wittmaack, K.
Location: Phys.-Tech. Abt., Ges. Strahlen- und Umweltforsch. m.b.H., Neuherberg, Ger.
Section: CA079006 Publ Class: JOURNAL
Journal: Appl. Phys. Lett. Coden: APPLAB Publ: 76 Series: 29 Issue: 9 Pages: 552-4
Identifiers: secondary ion mass spectroscopy, arsenic concn profile detn silicon, phosphorus concn profile detn silicon, silicon analysis mass spectroscopy, high sensitivity mass spectroscopy

CA08614099772P
High performance SIMS system
Author: Dawson, P. H., Redhead, P. A.
Location: Div. Phys., Natl. Res. Counc., Ottawa, Ont.
Section: CA076011 Publ Class: JOURNAL
Journal: Rev. Sci. Instrum. Coden: RSINAK Publ: 77 Series: 48 Issue: 2 Pages: 159-67
Identifiers: secondary ion mass spectrometer

CA08614099771N
In-depth concentration profiling of garnet epilayers using secondary ion mass spectrometry
Author: Morgan, A. E., Werner, H. W., Gourgout, J. M.
Location: Philips Res. Lab., Eindhoven, Neth.
Section: CA076011 Publ Class: JOURNAL
Journal: Appl. Phys. Coden: APHYCC Publ: 77 Series: 12 Issue: 3 Pages: 283-6
Identifiers: mass spectroscopy garnet profiling

CA08614099769T
Application of secondary-electron capture negative-ion (SECNI) mass spectrometry to the analysis of metal-organic compounds
Author: Dakternieks, Dainis R., Fraser, Ian W., Garnett, John L., Gregor, Ian K.
Location: Sch. Chem., Univ. New South Wales, Kensington, Aust.
Section: CA076011, CA080XXX Publ Class: JOURNAL
Journal: Talanta Coden: TLNTA2 Publ: 76 Series: 23 Issue: 10 Pages: 701-4
Identifiers: electron capture neg mass spectrometry, organometal complex mass spectrometry, metal complex mass spectrometry

CA08612083213W
Quantitative secondary ion mass spectrometry analysis of oxygen isotopes and other light elements in silicon oxide films
Author: Croset, M., Dieumegard, D.
Location: Lab. Cent. Rech. Thomson, CSF, Orsay, Fr.
Section: CA079006, CA072XXX, CA076XXX Publ Class: JOURNAL
Journal: Corros. Sci. Coden: CRRSAA Publ: 76 Series: 16 Issue: 10 Pages: 703-15
Identifiers: mass spectrometry silica analysis, silica film oxygen analysis, boron analysis silica film, fluorine analysis silica film, silicon anodic oxidn mechanism

CA08612083090D
Technique for the microanalysis of surface layers and thin films
Author: Canali, C., Prudenziati, M.
Location: Ist. Fis., Univ. Modena, Modena, Italy
Section: CA079000 Publ Class: JOURNAL
Journal: Alta Freq. Coden: ALFRAJ Publ: 76 Series: 45 Issue: 5 Pages: 266-78 Language: Ital
Identifiers: review surface thin film microanalysis, ion microprobe analysis review, backscattering ion analysis review, Auger spectrometry analysis review, mass spectrometry analysis review, secondary ion mass spectrometry review

DIALOG File4: CA CONDENS/CASIA 77- /VOL87(08) (COPR. Am. Chem. Soc.) (Item 36 of 71) User4269 12sep77

CA08620148055T
De-excitation processes near the surface of ion bombarded silicon dioxide and silicon
Author: Martin, P. J., Bayly, A. R., Macdonald, R. J., Tolk, N. H., Clark, G. J., Kelly, J. C.
Location: Dep. Phys., Aust. Natl. Univ., Canberra, Aust.
Section: CA073003, CA071XXX Publ Class: JOURNAL
Journal: Surf. Sci. Coden: SUSCAS Publ: 76 Series: 60 Issue: 2 Pages: 349-64
Identifiers: deexcitation process ion bombarded silica, silicon deexcitation process ion bombarded silica

CA08618132938X
Study of the composition of thallium nitride by secondary ion-ion emission
Author: Andreeva, A. F., Chenakin, S. P.
Location: USSR
Section: CA079006 Publ Class: JOURNAL
Journal: v sb., Poluchenie i Svoistva Tonkikh Plenok. Coden: D4JOU5 Publ: 76 Pages: 17-21 Language: Russ
Citation: Ref. Zh., Khim. 1976, Abstr. No. 18G195
Identifiers: thallium nitride analysis ion emission, secondary ion emission thallium nitride, mass spectroscopy thallium nitride

CA08618132899K
Auger-ESCA combined spectrometry for material characterization
Author: Schillalies, H., Chatel, J. L.
Location: Leybold Heraeus, Cologne, Ger.
Section: CA079006 Publ Class: JOURNAL
Journal: Vide Coden: VIDEAA Publ: 74 Series: 171, Suppl. Issue: Appl. Processus Electron. Ioniques, Congr. Int. AVISEM, 4th, 1974 Pages: 92-100 Language: Fr
Identifiers: ESCA Auger spectroscopy surface analysis, copper analysis combined ESCA Auger, secondary ion mass spectroscopy copper

CA08618132898J
Quantitative ion microanalysis of a steel surface
Author: Servais, J. P., Graas, H., Leroy, V., Habraken, L.
Location: Abbaye Val Benoit, Liege, Belg.
Section: CA079006 Publ Class: JOURNAL
Journal: Vide Coden: VIDEAA Publ: 75 Series: 177. Suppl. Issue: Colloq. Eur. Metall. Vide: Tendances Actuelles, 1975 Pages: 19-27 Language: Fr
Identifiers: steel surface microanalysis, secondary ion mass spectroscopy steel, cathode sputtering steel surface

CA08618132817G
Analytical studies in the small-dimension range
Author: Than, Eberhard
Location: Sekt. Chem. Werkstofftech., Tech. Hochsch. Karl-Marx-Stadt, Karl-Marx-Stadt, E. Ger.
Section: CA079001 Publ Class: JOURNAL
Journal: Z. Chem. Coden: ZECEAL Publ: 77 Series: 17 Issue: 1 Pages: 29 Language: Ger
Identifiers: microanalysis small dimension solid, efficiency small dimension solid analysis, information depth solic analysis, depth profile solid analysis

CA08618132079T
Surface analyzer combining secondary ion mass spectrometry and ion scattering spectrometry
Author: Ishitani, Tohru, Itoh, Michiyasu, Tamura, Hifumi, Shimizu, Ryuichi
Location: Cent. Res. Lab., Hitachi, Ltd., Tokyo, Japan
Section: CA076011, CA066XXX, CA079XXX Publ Class: JOURNAL
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 76 Series: 24 Issue: 3 Pages: 261-3
Identifiers: surface analyzer SIMS ISS, secondary ion mass spectroscopy analyzer, ion scattering spectrometry analyzer

CA08617118166N
SIMS study of element concentration profiles in enamel and dentin
Author: Frostell, G., Larsson, S. J., Lodding, A., Ocelius, H., Petersson, L. G.
Location: Dep. Cariol., Sch. Dent., Malmo, Swed.
Section: CA013001, CA009XXX Publ Class: JOURNAL
Journal: Scand. J. Dent. Res. Coden: SJDRAN Publ: 77 Series: 85 Issue: 1 Pages: 18-21
Identifiers: tooth element detn, mass spectrometry tooth element

DIALOG File4: CA CONDENS/CASIA 77- /VOL87(08) (COPR. Am. Chem. Soc.) (Item 29 of 71) User4269 12sep77

CA08622164720M
New apparatus for solid and surface analysis using high energy molecular beams
Author: Devienne, F. Marcel, Roustan, Jean C.
Location: Lab. Phys. Mol. Hautes Energ., Peymeinade, Fr.
Section: CA079002, CA066XXX Publ Class: JOURNAL
Journal: C. R. Hebd. Seances Acad. Sci., Ser. B Coden: CHDBAN Publ: 76 Series: 283 Issue: 14 Pages: 397-9
Language: Fr
Identifiers: molecular beam source mass spectrometer, surface analysis mass spectroscopy, solid analysis mass spectroscopy

CA08622164224C
Surface ionization - "plasma" in disguise
Author: Coles, John N.
Location: Ion-Microprobe Unit, Natl. Environ. Res. Counc., Cambridge, Engl.
Section: CA076011 Publ Class: JOURNAL
Journal: Surf. Sci. Coden: SUSCAS Publ: 76 Series: 55 Issue: 2 Pages: 721-4
Identifiers: plasma secondary ion mass spectroscopy, surface ionization plasma

CA08622164221Z
Quantitative evaluation of SIMS-spectra using Saha-Eggert type equations
Author: Ruedenauer, F. G., Steiger, W.
Location: Seibersdorf Inst. Phys., Oesterr. Studienges. Atomenerg. G.m.b.H., Vienna, Austria
Section: CA076011, CA055XXX, CA056XXX, CA079XXX Publ Class: JOURNAL
Journal: Vacuum Coden: VACUAV Publ: 76 Series: 26 Issue: 12 Pages: 537-43
Identifiers: secondary ion mass spectra analysis, Saha Eggert equation spectra analysis

CA08622163925V
The use of the ion microprobe in industry
Author: Phillips, B. F.
Location: Battelle Columbus Lab., Columbus, Ohio
Section: CA076000 Publ Class: CONF PROC
Journal: Proc. Conf. Appl. Small Accel., 3rd Coden: 33DTAV Publ: 75 Series: 2(CONF-741040-P2), Pages: 154-65 Meeting Date: 74
Publisher: NTIS Address: Springfield, Va
Avail: Duggan, Jerome L.; Morgan, I. L
Identifiers: review ion microprobe analysis, mass spectroscopy secondary ion review, semiconductor ion microprobe review, metallurgy ion microprobe review

CA08622161703X
Evaluation of impurity and contamination levels on mica surfaces using SSIMS
Author: Dowsett, M. G., King, R. M., Parker, E. H. C.
Location: Dep. Phys., City London Polytech., London, Engl.
Section: CA066003, CA075XXX, CA076XXX Publ Class: JOURNAL
Journal: J. Vac. Sci. Technol. Coden: JVSTAL Publ: 77 Series: 14 Issue: 2 Pages: 711-17
Identifiers: mica surface contamination mass spectra, cleaning mica surface evaluation, muscovite surface concn impurity, hydrocarbon surface concn mica

CA08622161633Z
SIMS studies at metal surfaces
Author: Barber, M.
Location: Dep. Chem., Univ. Manchester Inst. Sci. Technol., Manchester, Engl.
Section: CA066000, CA065XXX, CA076XXX Publ Class: JOURNAL
Journal: NATO Adv. Study Inst. Ser., Ser. B Coden: NASBD3 Publ: 76 Series: B16 Issue: Electron. Struct. React. Met. Surf. Pages: 459-83 Meeting Date: 75
Identifiers: review mass spectroscopy surface, electron structure surface review, compn surface mass spectra review, metal surface mass spectra review

CA08620149944U
Detection of hydrogen in metals by the SIMS-method with quadrupole mass filter
Author: Pavlyak, F., Bori, L., Giber, J., Buhl, R.
Location: Phys. Inst., Tech. Univ. Budapest, Budapest, Hung.
Section: CA079005, CA076XXX Publ Class: JOURNAL
Journal: Jpn. J. Appl. Phys. Coden: JJAPA5 Publ: 77 Series: 16 Issue: 2 Pages: 335-42
Identifiers: hydrogen detection metal mass spectroscopy, quadrupole mass filter hydrogen detection, secondary ion mass spectroscopy hydrogen

DIALOG File4: CA CONDENS/CASIA 77- /VOL87(08) (COPR. Am. Chem. Soc.) (Item 22 of 71) User4269 12sep77

CA08624182467P
Ion microprobe trace element analysis with high mass resolution
Author: Reed, S. J. B., Long, J. V. P., Coles, J. N., Astill, D. M.
Location: Dep. Mineral. Petrol., Natl. Environ. Res. Cent., Cambridge, Engl.
Section: CA079006 Publ Class: JOURNAL
Journal: Int. J. Mass Spectrom. Ion Phys. Coden: IJMISY Publ: 76 Series: 22 Issue: 3-4 Pages: 333-8
Identifiers: ion microprobe trace element detn, mass resoln ion microprobe analysis

CA08624181533V
Sputtering of thin films in an ion microprobe
Author: Hofer, W. O., Liebl, H.
Location: Max-Planck-Inst. Plasmaphys., Garching, Ger.
Section: CA076011, CA075XXX Publ Class: CONF PROC
Journal: Ion Beam Surf. Layer Anal., (Proc. Int. Conf.) Coden: 35KKAM Publ: 76 Series: 2, Pages: 659-64 Meeting Date: 75
Publisher: Plenum Address: New York, N. Y
Avail: Meyer, Otto; Linker, Gerhard; Kaeppeler, Franz
Identifiers: sputtering film ion microprobe, mass spectroscopy film sputtering, titanium sputtering oxygen coverage

CA08624181468C
Problems occurring in depth concentration profiling
Author: Buger, P. A., Blum, F., Schilling, J. H.
Location: Natl. Phys. Res. Lab., Counc. Sci. Ind. Res., Pretoria, S. Afr.
Section: CA076008 Publ Class: JOURNAL
Journal: Z. Naturforsch., A Coden: ZENAAU Publ: 77 Series: 32A Issue: 2 Pages: 144-6
Identifiers: depth concn profiling, mass spectrometry depth profiling

CA08624181435Q
An apparatus for measuring the positive secondary ion emission from solid surfaces
Author: Duesterhoeft, Heinz, Manns, Rainer, Rogaschewski, Siegfried
Location: Sekt. Phys., Humboldt-Univ. Berlin, Berlin, E. Ger.
Section: CA076005 Publ Class: JOURNAL
Journal: Exp. Tech. Phys. Coden: EXPPAL Publ: 77 Series: 25 Issue: 2 Pages: 117-22 Language: Ger
Identifiers: secondary ion emission app, solid surface secondary ion emission, metal secondary ion yield

CA08624181431N
Xenon(1+) ion beam induced secondary ion (silicon(1+)) yield from silicon-metal interfaces
Author: Narusawa, T., Satake, T., Komiya, S., Shimizu, A., Iwami, M., Hiraki, A.
Location: ULVAC Corp., Chigasaki, Japan
Section: CA076005 Publ Class: CONF PROC
Journal: Ion Beam Surf. Layer Anal., (Proc. Int. Conf.) Coden: 35KKAM Publ: 76 Series: 2. Pages: 665-73 Meeting Date: 75
Publisher: Plenum Address: New York, N. Y
Avail: Meyer, Otto; Linker, Gerhard; Kaeppeler, Franz
Identifiers: silicon sputtering yield xenon, gold silicon xenon sputtering, surface silicon xenon sputtering, mass spectra silicon sputtering

CA08624177785M
New methods of studying solid state surfaces
Author: Benninghoven, Alfred
Location: Phys. Inst., Univ. Muenster, Muenster, Ger.
Section: CA066000, CA075XXX, CA065XXX Publ Class: JOURNAL
Journal: Phys. Bl. Coden: PHBLAG Publ: 76 Series: 32 Issue: 7 Pages: 299-308 Language: Ger
Identifiers: review adsorption surface structure, photoelectron spectroscopy adsorption review, Auger spectroscopy adsorption review, mass spectroscopy adsorption review, analysis surface electron spectra review

CA08624177784K
Monolayer analysis of contaminated surfaces
Author: Holm, Reimer, Storp, Siegfried
Location: Ingenieurber. Angew. Phys., Bayer A.-G., Leverkusen, Ger.
Section: CA066000, CA075XXX, CA065XXX Publ Class: JOURNAL
Journal: Phys. Bl. Coden: PHBLAG Publ: 76 Series: 32 Issue: 8 Pages: 343-52 Language: Ger
Identifiers: review surface analysis, Auger spectroscopy surface review, mass spectroscopy surface review, photoelectron spectroscopy surface review, ion scattering surface review, electron microscopy surface review, IR spectroscopy surface review

DIALOG File4: CA CONDENS/CASIA 77- /VOL87(08) (COPR. Am. Chem. Soc.) (Item 15 of 71) User4269 12sep77

CA087020014292E
Methods and results of studies of the state of atoms and the element composition in angstrom-thickness surface layers
Author: Borovskii, I. B.
Location: Inst. Fiz. Tverd. Tela, Chernogolovka, USSR
Section: CA075000 Publ Class: JOURNAL
Journal: Izv. Akad. Nauk SSSR, Ser. Fiz. Coden: IANFAY Publ: 76 Series: 40 Issue: 2 Pages: 296-302 Language: Russ
Identifiers: review state atom surface method, compn surface layer detn review

CA087020012092R
Quantitative determination of water coverage on potassium chloride(001) by secondary ion mass spectroscopy
Author: Kaarmann, H., Hoinkes, H., Wilsch, H.
Location: Phys. Inst., Univ. Erlangen-Nuernberg, Erlangen, Ger.
Section: CA066004 Publ Class: JOURNAL
Journal: J. Chem. Phys. Coden: JCPSA6 Publ: 77 Series: 66 Issue: 10 Pages: 4572-6
Identifiers: water detn adsorbed potassium chloride, mass spectroscopy adsorbed water

CA086261993534W
Test of a quantitative approach to secondary ion mass spectrometry on glass and silicate standards
Author: Morgan, A. E., Werner, H. W.
Location: Philips Res. Lab., Eindhoven, Neth.
Section: CA079006, CA057XXX Publ Class: JOURNAL
Journal: Anal. Chem. Coden: ANCHAM Publ: 77 Series: 49 Issue: 7 Pages: 927-31
Identifiers: secondary ion mass spectrometry quant, glass analysis mass spectrometry, silicate analysis mass spectrometry

CA086261987844A
In situ characterization of MBE grown gallium arsenide and aluminum gallium arsenide (AlxGa1-xAs) films using RHEED, SIMS, and AES techniques
Author: Ploog, K., Fischer, A.
Location: Max-Planck-Inst. Festkoeperforsch., Stuttgart, Ger.
Section: CA076013, CA075XXX Publ Class: JOURNAL
Journal: Appl. Phys. Coden: APHYCC Publ: 77 Series: 13 Issue: 2 Pages: 111-21
Identifiers: epitaxy aluminum gallium arsenide, mol beam epitaxy

CA086261934553J
Application of secondary ion mass spectrometry in the research of tungsten
Author: Kozma, Laszlo, Riedel, Miklos
Location: Fiz. Kem. Tanszek, Estvos Lorand Tudomanyegy., Budapest, Hung.
Section: CA056007, CA073XXX Publ Class: JOURNAL
Journal: Magy. Tud. Akad. Musz. Fiz. Kut. Intez. Kozl. Coden: MTIKAV Publ: 75 Issue: 0-16 Pages: 23-32 Language: Hung
Identifiers: iron grain boundary diffusion tungsten, nickel grain boundary diffusion tungsten, mass spectrometry secondary ion tungsten

CA086261932324J
Surface techniques for the study of materials: AES, ESCA, SIMS
Author: Marcus, H. L.
Location: Univ. Texas, Austin, Tex.
Section: CA056000, CA066XXX Publ Class: JOURNAL
Journal: J. Met. Coden: JOMTAA Publ: 77 Series: 29 Issue: 2 Pages: 20-4
Identifiers: review alloy surface examn, Auger electron microscopy alloy review, mass spectroscopy alloy surface review

DIALOG File4: CA CONDENS/CASIA 77- /VOL87(08) (COPR. Am. Chem. Soc.) (Item 8 of 71) User4269 12sep77

CA087040331210
Use of ion and electron microprobes for full characterization of particulate matter
Author: Gavrilovic, John, Majewski, Elizabeth
Location: Walter C. McCrone Assoc. Inc., USA
Section: CA079001 Publ Class: JOURNAL
Journal: Am. Lab. (Fairfield, Conn.) Coden: ALBYBL Publ: 77 Series: 9 Issue: 4 Pages: 19-21, 24-5, 27-8
Identifiers: electron microprobe particle analysis, ion microprobe particle analysis, secondary ion mass spectrometry particle

CA087040272070F
SEM + SIMS: a unique combination for surface characterization
Author: Leys, J. A., McKinney, J. T.
Location: Cent. Res. Lab., 3M Co., St. Paul, Minn.
Section: CA056006, CA057XXX Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 75 Series: 10, Pages: 59A-59E
Identifiers: electron microscopy scanning surface, mass spectrometry secondary ion, aluminum silicon surface analysis, glass fluorocarbon coating analysis

CA087020155030
Depth profile detection limit of 3 .times. 1015 atom cm-3 for arsenic in silicon using cesium(+) ion bombardment negative secondary ion mass spectrometry
Author: Williams, Peter, Evans, Charles A., Jr.
Location: Mater. Res. Lab., Univ. Illinois, Urbana, Ill.
Section: CA079006, CA076XXX Publ Class: JOURNAL
Journal: Appl. Phys. Lett. Coden: APPLAB Publ: 77 Series: 30 Issue: 11 Pages: 559-61
Identifiers: arsenic depth profile detn silicon, secondary ion mass spectrometry silicon, cesium ion source mass spectrometry, neg secondary ion mass spectrometry

CA087020154210
Investigations on copper-nickel and copper-aluminum systems with secondary ion mass spectrometry (SIMS)
Author: Rodriguez-Murcia, H., Baskc, H. E.
Location: Zentalabt. Chem. Anal., KFA, Juelich G.m.b.H., Juelich, Ger.
Section: CA079006 Publ Class: TECH REP
Journal: Report Coden: C2REPU Publ: 76 Issue: Juel-1292, Pages: 92 pp. Language: Ger
Citation: INIS Atomindex 1976, 7(23), Abstr. No. 274122
Avail: INIS
Identifiers: secondary ion mass spectrometry analysis, alloy analysis mass spectrometry, copper alloy analysis mass spectrometry, nickel alloy analysis mass spectrometry, aluminum alloy analysis mass spectrometry, ionization coeff mass spectrometry, cluster ion mass spectrometry

CA087020153500
Newer methods for surface analysis
Author: Holm, R.
Location: Leverkusen, Ger.
Section: CA079000 Publ Class: CONF PROC
Journal: Messtech. Autom., Int. Kongr., Kongressvortr., 6th Coden: 35ITA5 Publ: 74 Pages: 27-36 Language: Ger
Publisher: VDI-Verlag Address: Duesseldorf, Ger
Avail: Toeller, Heinrich
Identifiers: review surface analysis, secondary ion mass spectrometry review, Auger spectroscopy surface analysis review, x ray photoelectron spectroscopy review, photoelectron spectroscopy surface review

Print 8/2/1-71
DIALOG File4: CA CONDENS/CASIA 77- /VOL87(08) (COPR. Am. Chem. Soc.) (Item 1 of 71) User4269 12sep77

CA08708061974P
Study of solid surfaces by secondary-ion mass spectrometry (SIMS)
Author: Vancea, I.
Location: Inst. Izot. Stabili, Cluj-Napoca, Rom.
Section: CA079000, CA076XXX Publ Class: JOURNAL
Journal: Stud. Cercet. Fiz. Coden: SCEFAB Publ: 76 Series: 28 Issue: 9 Pages: 921-39 Language: Rom
Identifiers: review secondary ion mass spectrometry, surface analysis mass spectrometry review

CA08708057276V
Secondary ion mass spectrometry for diffusion studies in glass
Author: Mizuike, Atsushi, Iino, Akira
Location: Fac. Eng., Nagoya Univ., Nagoya, Japan
Section: CA057001 Publ Class: JOURNAL
Journal: Bull. Chem. Soc. Jpn. Coden: BCSJA8 Publ: 77 Series: 50 Issue: 6 Pages: 1469-71
Identifiers: glass silver sodium diffusion, silver diffusion glass cation exchange, sodium diffusion glass cation exchange, cation exchange diffusion glass

CA08706047595J
A quadrupole instrument for investigations of electron and ion beam interactions with solids
Author: Potosky, J. C., Wittry, D. B.
Location: Dep. Mater. Sci. Electr. Eng., Univ. South. California, Los Angeles, Calif.
Section: CA079002 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 75 Series: 10, Pages: 76A-76D
Identifiers: quadrupole mass spectrometer solid, secondary ion mass analyzer solid, ion beam interaction solid, electron beam interaction solid

CA08706047567B
Analysis of solid surface monolayers by mass and energy spectrometry methods
Author: Treitz, Norbert
Location: Phys.-Tech. Bundesanst., Berlin, Ger.
Section: CA079000 Publ Class: JOURNAL
Journal: J. Phys. E Coden: JPSIAE Publ: 77 Series: 10 Issue: 6 Pages: 573-85
Identifiers: review surface analysis spectrometry, mass spectrometry surface analysis review, energy spectrometry surface analysis review

CA08706044769H
SIMS, EID and flash-filament investigation of oxygen, hydrogen, (oxygen + hydrogen) and water interaction with vanadium
Author: Benninghoven, A., Mueller, K. H., Ploc, C., Schemmer, M., Steffens, P.
Location: Phys. Inst., Univ. Muenster, Muenster, Ger.
Section: CA067003, CA066XXX, CA076XXX Publ Class: JOURNAL
Journal: Surf. Sci. Coden: SUSCAS Publ: 77 Series: 63, Pages: 403-16
Identifiers: vanadium reaction hydrogen oxygen water, oxygen reaction vanadium surface, hydrogen reaction vanadium surface, water reaction vanadium surface, mass spectroscopy vanadium surface reaction

CA08704033236F
Quantitative multielement analysis with SIMS
Author: Fralick, R. D., Conrad, R. L.
Location: Appl. Res. Lab., Sunland, Calif.
Section: CA079006 Publ Class: JOURNAL
Journal: Res./Dev. Coden: REDEA6 Publ: 77 Series: 28 Issue: 3 Pages: 32-4, 36, 38
Identifiers: secondary ion mass spectrometry analysis, multielement analysis mass spectrometry

CA08704033191N
Semiquantitative analysis of alloys with SIMS
Author: Gerlach, R. L., Davis, L. E.
Location: Phys. Electron. Ind., Inc., Eden Prairie, Minn.
Section: CA079006 Publ Class: JOURNAL
Journal: J. Vac. Sci. Technol. Coden: JVSTAL Publ: 77 Series: 14 Issue: 1 Pages: 339-42
Identifiers: alloy analysis mass spectroscopy, secondary ion mass spectroscopy alloy, nickel alloy analysis mass spectroscopy, aluminum alloy analysis mass spectroscopy, silicon detn alloy mass spectroscopy, transition metal detn alloy

CA087120942S1D
Application of characteristic secondary ion mass spectra to a depth analysis of iron aluminum oxide
Author: Kitada, Akihiko, Tamura, Hifumi
Location: Nippon Coll. Health Phys. Educ., Tokyo, Japan
Section: CA076011, CA055XXX, CA079XXX Publ Class: JOURNAL
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 77 Series: 25 Issue: 1 Pages: 85-9
Identifiers: mass spectrometry secondary ion oxide, iron aluminum oxide depth analysis, concn profile iron aluminum oxide

CA087120942S1D
Descriptors: Mass spectra,secondary-ion
Identifiers: base depth anal oxide spectroscopy properties concn profile oxidized iron aluminum alloy surface
CAS Registry Numbers: 11146-20-6 7429-90-5 7439-89-6 1344-28-1 1309-37-1

CA087120911715
Twin modulated supersonic beams apparatus applied to interaction with a surface cnemically analyzed by S.S.I.M.S
Author: Cavallini, M., Nencini, G.
Location: Lab. Ric. Base, Snamprogetti S.p.A., Rome, Italy
Section: CA066003 Publ Class: CONF PROC
Journal: C. R. - Symp. Int. Jets Mol., 5th Coden: 36GLAC Publ: 75 Pages: Paper No. B4, 10 pp.
Publisher: Com. Int. Jets Mol., c/o Dr. F. Marcel Devienne Address: Peymeinade, Fr
Identifiers: secondary ion mass spectroscopy surface, water adsorption interaction silver surface

CA087120911715
Descriptors: Adsorption;Desorption
Identifiers: properties water vapor interaction silver surface beams
CAS Registry Numbers: 7440-22-4 7732-18-5 7440-37-1

CA087120891647
Construction and operating parameters of the mass spectrometric part of the apparatus for studying the reaction of liquid metals with gases by secondary ion-ion emission
Author: Pokhodnya, I. K., Shvachko, V. I., Alabushev, D. G., Komissar, A. D.
Location: Khar'k. Gos. Univ. im. Gor'kogo, Kharkov, USSR
Section: CA056007, CA076XXX Publ Class: TECH REP
Journal: Deposited Doc. Coden: D8DEP2 Publ: 75 Issue: VINITI 2783-75, Pages: 111-13 Language: Russ
Avail: BLLD
Identifiers: gas metal reaction spectrometry, mass spectrometer ion emission

CA087120891647
Descriptors: Metals,reactions;Mass spectrometers and spectrographs,secondary-ion
Identifiers: gases study gas molten

CA087120890487
Analysis of the surface of platinum-rhodium alloys by x-ray photoelectron spectrometry and secondary ion mass spectrometry
Author: Blaise, G., Contour, J. P., Leclere, C.
Location: Lab. Phys. Solide, Univ. Paris Sud, Orsay, Fr.
Section: CA056006, CA066XXX Publ Class: JOURNAL
Journal: J. Microsc. Spectrosc. Electron. Coden: JMSEDI Publ: 76 Series: 1 Issue: 2 Pages: 247-54 Language: Fr
Identifiers: platinum rhodium surface analysis

CA087120890487
Descriptors: Surface
Identifiers: base anal high temps platinum rhodium alloys x ray photoelectron secondary ion mass spectroscopy
CAS Registry Numbers: 63781-42-0

CA087120886668
Phase analysis in steel by secondary ion mass spectrometry
Author: Maitrepierre, P., Namdar-Irani, R., Rofes-Vernis, J. Thomas, B., Henry, G.
Location: Inst. Rech. Sider. Fr., St.-Germain-en-Laye, Fr.
Section: CA055007 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 76 Series: 11, Pages: Paper No. 43, 7 pp.
Identifiers: steel phase analysis mass spectrometry, niobium carbide pptn steel, carbide pptn detn steel

CA087120886668
Descriptors: Mass spectroscopy,secondary-ion
Identifiers: solid soln. (NbN) pptn high Ni stainless steel detn spectrometry niobium carbide phase anal base carbonitride
CAS Registry Numbers: 12069-94-2D 24621-21-4D 63665-10-1 63665-11-2

CA087141107970
Comparison of surface sputtering characteristics by a low energy secondary ion mass analysis using a quadrupole type analyzer with those using Auger electron spectrum analysis
Author: Suga, Yoshiki, Kikuchi, Tadashi, Furuya, Keiichi, Ono, Hirobumi, Hoshino, Kiyoshi
Location: Fac. Sci., Sci. Univ. Tokyo, Tokyo, Japan
Section: CA079001, CA076XXX Publ Class: JOURNAL
Journal: Bunseki Kagaku Coden: BNSKAK Publ: 77 Series: 26 Issue: 4 Pages: 271-2 Language: Japan
Identifiers: sputtering surface analysis, secondary ion mass spectroscopy analysis, Auger spectroscopy analysis

CA087141107970
Descriptors: Mass spectrometers and spectrographs,quadrupole, secondary-ion;Mass spectroscopy,quadrupole, secondary-ion; Electron emission spectroscopy,Auger;Alloys,analysis;Sputtering
Identifiers: low energy ionization surface Auger compared characteristics

CA087141107910
Local surface analysis - a new area of microchemical methods of work
Author: Holm, R.
Location: Ber. Angew. Phys., Bayer A.-G., Leverkusen, Ger.
Section: CA079000 Publ Class: JOURNAL
Journal: Chem. Rundsch. Coden: CHRUAE Publ: 77 Series: 30 Issue: 20 Pages: 6-7, 9, 11, 14 Language: Ger
Identifiers: review local surface analysis, secondary ion mass spectroscopy review, mass spectroscopy surface analysis review, Auger spectroscopy surface analysis review, ESCA local surface analysis review

CA087141107910 R
Descriptors: Surface;Mass spectroscopy,secondary ion; Photoelectron spectroscopy,ESCA;Electron emission spectroscopy,Auger
Identifiers: local anal

CA087141102340
Relative ion sputtering yield measurements by integration of secondary ion energy distribution using a retarding-dispersive ion energy analyzer
Author: Krauss, A. R., Gruen, D. M.
Location: Chem. Div., Argonne Natl. Lab., Argonne, Ill.
Section: CA076005 Publ Class: JOURNAL
Journal: Appl. Phys. Coden: APHYCC Publ: 77 Series: 14 Issue: 1 Pages: 89-97
Identifiers: ion sputtering yield detn, mass spectrometer sputtering yield, energy analyzer sputtering yield

CA087141102340
Descriptors: Ions in gases;Sputtering,yield;Mass spectrometers and spectrographs,secondary-ion
Identifiers: energy analyzer retarding dispersive detn integration distribution

CA087120949850
Sensitivity effects in the analysis of nickel-chromium-iron alloys by IMMA
Author: Brown, J. D., Gras, D. J., Von Rosenstiel, A. P., Kolster, B. H.
Location: Metaalinst., TNO, Apeldoorn, Neth.
Section: CA079006 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCDB Publ: 76 Series: 11, Pages: Paper No. 44, 2 pp.
Identifiers: ion microprobe analysis alloy, iron alloy analysis ion microprobe, chromium iron alloy microprobe analysis, nickel iron alloy microprobe analysis

CA087120949850
Descriptors: Mass spectroscopy,secondary ion microprobe
Identifiers: nonbase anal chromium iron nickel alloys
CAS Registry Numbers: 11122-73-9 11148-32-6

CA087120948600
An assessment of some techniques available for the local detection of hydrogen in metals
Author: Marsh, G. P.
Location: Mater. Dev. Div., AERE, Harwell/Oxfordshire, Engl.
Section: CA079005 Publ Class: TECH REP
Journal: U. K. At. Energy Res. Establ., Rep. Coden: UKRGAL Publ: 76 Issue: AERE-R 8560, Pages: 29 pp.
Identifiers: tritium autoradiog hydrogen detection metal, neutron radiog hydrogen detection metal, nuclear microprobe hydrogen detection metal, metal local analysis hydrogen, secondary ion mass spectrog hydrogen, steel analysis hydrogen embrittlement, titanium alloy analysis hydrogen

CA087120948660
Descriptors: Alloys,analysis;Metals,analysis;Mass spectroscopy,secondary-ion;Radiochemical analysis,activation, microprobe;Radiography,neutron
Identifiers: detection hydrogen local embrittlement studies Titanium base uses miscellaneous isotope indicator autoradiog
CAS Registry Numbers: 1333-74-0 12597-69-2 10028-17-8

CA087141108960A
Metallurgical applications of secondary ion mass spectrometry
Author: Walsh, J. M.
Location: Mater. Eng. Res. Lab., Pratt and Whitney Aircr., East Hartford, Conn.
Section: CA079006 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 74 Series: 9, Pages: Paper No. 51, 4 pp.
Identifiers: secondary ion mass spectroscopy metallurgy, ion microprobe metallurgical analysis, oxygen detn titanium alloy, nitrogen detn titanium alloy, titanium alloy analysis oxygen nitrogen, boron boundary segregation nickel alloy

CA087141108960A
Descriptors: Metallurgy;Mass spectroscopy,secondary ion microprobe
Identifiers: analysis detn titanium alloys base nitrogen oxygen nickel alloy grain boundaries Nickel boron anal metallurgical
CAS Registry Numbers: 7782-44-7 7727-37-9 12743-70-3 7440-42-8

CA087141108900U
High mass-resolution ion microprobe analysis
Author: Reed, S. J. B., Long, J. V. P., Coles, J. N., Astill, D. M.
Location: Dep. Mineral. Petrol., Univ. Cambridge, Cambridge, Engl.
Section: CA079006 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 76 Series: 11, Pages: Paper No. 46, 4 pp.
Identifiers: high mass resoln ion microprobe, mass spectroscopy ion microprobe analysis, mass resoln ion microprobe analysis, chromium detn glass ion microprobe, glass analysis chromium, mol peak interference ion microprobe

CA087141108900U
Descriptors: Mass spectrometers and spectrographs,secondary-ion microprobe
Identifiers: high resoln anal

CA087141108890A
Local thermal equilibrium analysis of secondary ion mass spectra from multi-element glasses
Author: Newbury, Dale E., Mykelbust, Robert L., Heinrich, Kurt F. J.
Location: Anal. Chem. Div., Natl. Bur. Stand., Washington, D. C.
Section: CA079006 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 76 Series: 11, Pages: Paper No. 42, 7 pp.
Identifiers: local thermal equil mass spectroscopy, glass analysis mass spectroscopy, secondary ion mass spectroscopy glass

CA087141108890A
Descriptors: Mass spectroscopy,secondary ion;Glass,oxide
Identifiers: anal local thermal equil

CA087141108310A
Detection of silicate (SiO2-) ions from silicon dioxide-silicon interface by means of SIMS
Author: Nakamura, Kazumitsu, Hirose, Hiroshi, Shibata, Atsushi, Tamura, Hifumi
Location: Naka Works, Hitachi Ltd., Katsuta, Japan
Section: CA079005 Publ Class: JOURNAL
Journal: Jpn. J. Appl. Phys. Coden: JJAPA5 Publ: 77 Series: 16 Issue: 8 Pages: 1307-11
Identifiers: silicate ion detection interface silicon, silica interface silicate ion detection, secondary ion mass spectroscopy silicate

CA087141108310A
Descriptors: Mass spectroscopy,secondary-ion;Interface
Identifiers: detection silica silicon analysis silicate anal ions
CAS Registry Numbers: 53095-83-3 12210-41-2 7631-86-9 7440-21-3

CA087141108300Z
Tests for the identification of iron oxides using an ion probe microanalyzer
Author: Namdar-Irani, R.
Location: Inst. Rech. Sider., Saint-Germain-en Laye, Fr.
Section: CA079005 Publ Class: JOURNAL
Journal: J. Microsc. Spectrosc. Electron. Coden: JMSEDI Publ: 77 Series: 2 Issue: 3 Pages: 293-300 Language: Fr
Identifiers: ion microprobe mass spectroscopy, secondary ion mass spectroscopy, iron oxide identification mass spectroscopy layer thickness detn mass spectroscopy

CA087141108300Z
Descriptors: Mass spectroscopy,secondary-ion
Identifiers: analysis identification oxide layers microprobe iron oxides
CAS Registry Numbers: 1345-25-1 1317-61-9

CA087161261477
Use of mass spectrometry of secondary ions for studying dielectric-semiconductor laminated systems
Author: Litovchenko, V. G., Marchenko, R. I., Romanova, G. F.
Location: Khar'k. Gos. Univ. im. Gor'kogo, Kharkov, USSR
Section: CA076013 Publ Class: TECH REP
Journal: Deposited Doc. Coden: D8DEP2 Publ: 75 Issue: VINITI 2783-75, Pages: 38-50 Language: Russ
Avail: BLLD
Identifiers: secondary ion mass spectra, semiconductor dielec mass spectra, silicon dielec mass spectra, silica silicon mass spectra, alumina silicon mass spectra, phosphosilicate glass silicon mass spectra

CA087161261477
Descriptors: Mass spectra,secondary-ion;Glass,oxide;Electric insulators and Dielectrics
Identifiers: properties structures silicon phosphosilicate
CAS Registry Numbers: 7440-21-3 7631-86-9 1344-28-1

CA087161261358
Analytical applications of "cluster ions" in spark-source mass spectrometry and secondary ion emission
Author: Stefani, R.
Location: CEN, CEA, Grenoble, Fr.
Section: CA076011, CA075XXX, CA079XXX Publ Class: JOURNAL
Journal: J. Phys. (Paris), Colloq. Coden: JPQCAK Publ: 77 Issue: 2 Pages: 19-21 Language: Fr
Identifiers: cluster ion application mass spectrometry, secondary ion emission cluster ion

CA087161261358
Descriptors: Mass spectroscopy
Identifiers: cluster ion applications

CA087161261288
Sources of positive ions for mass spectrometric apparatus
Author: Bobkov, V. V., Klimovskii, Yu. A., Sidorenko, Yu. V. Koval, A. G.
Location: Khar'k. Gos. Univ. im. Gor'kogo, Kharkov, USSR
Section: CA076011 Publ Class: TECH REP
Journal: Deposited Doc. Coden: D8DEP2 Publ: 75 Issue: VINITI 2783-75, Pages: 132-40 Language: Russ
Avail: BLLD
Identifiers: ion source mass spectrometer, pos ion source mass spectrometer, secondary ion mass spectrometer source

CA087161261288
Descriptors: Ion sources
Identifiers: secondary mass spectrometers

CA087161257858
Secondary ion-ion emission study of ion processes in a problem-solving laboratory
Author: Koval, A. G.
Location: Khar'k. Gos. Univ. im. Gor'kogo, Kharkov, USSR
Section: CA076000 Publ Class: TECH REP
Journal: Deposited Doc. Coden: D8DEP2 Publ: 75 Issue: VINITI 2783-75, Pages: 7-33 , Language: Russ
Avail: BLLD
Identifiers: secondary ion mass spectra review, metal secondary ion emission review, semiconductor secondary ion emission review, transition metal secondary ion review, IIIA pnictide secondary ion review, pnictide IIIA secondary ion review, adsorbed substance secondary ion review

CA087161257858 R
Descriptors: Mass spectra,secondary-ion;Adsorbed substances; Transition metals,properties;Group IIIA element pnictides
Identifiers: semiconductor compds Group III V semiconductors

CA087141108978
Ion scattering spectrometry and secondary ion mass spectroscopy: two complimentary techniques
Author: Leys, J. A., McKinney, J. T.
Location: Cent. Res. Lab., 3M Co., St. Paul, Minn.
Section: CA079006 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 74 Series: 9, Pages: Paper No. 52, 5 pp.
Identifiers: ion scattering spectrometry surface analysis, secondary ion mass spectroscopy surface, surface analysis spectroscopy

CA087141108978
Descriptors: Mass spectroscopy,secondary ion;Ion beams; Surface
Identifiers: anal scattering spectrometry compared seconday

CA087181419I7N
Quasisimultaneous SIMS-AES-XPS investigation of the oxidation of titanium in the monolayer range
Author: Benninghoven, A., Bispinck, H., Ganschow, O., Wiedmann, L.
Location: Phys. Inst., Univ. Muenster, Muenster, Ger.
Section: CA067003 Publ Class: JOURNAL
Journal: Appl. Phys. Lett. Coden: APPLAB Publ: 77 Series: 31 Issue: 5 Pages: 341-3
Identifiers: oxidn monolayer titanium spectroscopy, Auger spectroscopy titanium oxidn, photoelectron spectroscopy titanium oxidn, mass spectroscopy titanium oxidn

CA087181419I7N
Descriptors: Oxidation;Mass spectroscopy,secondary-ion; Electron emission spectroscopy,Auger;Photoelectron spectroscopy,x-ray
Identifiers: reactions oxidn monolayer range simultaneous titanium study Auger
CAS Registry Numbers: 7440-32-6

121

CA087161266B7U
Use of molecular beams for the analysis of organic compounds in liquid or solid state
Author: Devienne, F. Marcel, Giroud, Josiane
Location: Lab. Phys. Mol. Hautes Energ., Peymeinade, Fr.
Section: CA080006 Publ Class: CONF PROC
Journal: C. R. - Symp. Int. Jets Mol., 5th Coden: 36GLAC Publ: 75 Pages: Paper No. B7, 10 pp. Language: Fr
Publisher: Com. Int. Jets Mol., c/o Dr. F. Marcel Devienee Address: Peymeinade, Fr
Identifiers: secondary ion mass spectroscopy org, mol beam org film analysis, film org analysis mass spectroscopy

CA087161266B7U
Descriptors: Molecular beams;Mass spectroscopy,secondary-ion ;Films
Identifiers: anal org compd bombardment spectroscopic

CA087161265S0U
Identification of thin surface films on small particles
Author: Gavrilovic, J.
Location: McCrone Assoc., Inc., Chicago, Ill.
Section: CA079001 Publ Class: JOURNAL
Journal: Microscope Coden: MICRAD Publ: 77 Series: 25 Issue: 2 Pages: 119-26
Identifiers: thin film identification small particle, electron microscopy film identification particle, microprobe electron film identification particle, ESCA film identification particle, ion microprobe film identification particle, mass spectroscopy film identification particle

CA087161265S0U
Descriptors: Films;Particles;Electron microprobe analysis; Photoelectron spectroscopy,ESCA;Mass spectroscopy,secondary-ion;Mass spectroscopy,secondary-ion, microprobe;Microscopy,electron
Identifiers: identification small thin

CA087161262S4A
An instrument for secondary ion mass spectroscopy
Location: Ger.
Section: CA076011 Publ Class: PAT
Journal: Brit. Coden: BRXXAA Publ: 770504 Pages: 4 pp.
Identifiers: secondary ion mass spectrometer
Patent No: 1472356 Applic No: 2424306 Date: 740518 Class: H01J37/04 Country: Ger.
Assignee: Leybold-Heraeusverwaltungs G.m.b.H.

CA087161262S4A P
Descriptors: Mass spectrometers and spectrographs,secondary--ion
Identifiers: linear lens mask detector geometry

CA087181452450
Quantitative analysis of hydrogen in titanium with an ion microanalyzer
Author: Okajima, Yoshiaki, Aizawa, Yukiyoshi, Suzuki, Katsumi, Sugasara, Yasushi
Location: Hitachi Res. Lab., Hitachi, Ltd., Hitachi, Japan
Section: CA079006 Publ Class: JOURNAL
Journal: Bull. Chem. Soc. Jpn. Coden: BCSJA8 Publ: 77 Series: 50 Issue: 4 Pages: 886-8
Identifiers: hydrogen detn titanium ion microprobe, secondary ion mass spectroscopy hydrogen, mass spectroscopy microprobe hydrogen detn, titanium analysis hydrogen

CA087181452450
Descriptors: Mass spectroscopy,secondary-ion
Identifiers: analysis detn titanium microprobe spectroscopic hydrogen
CAS Registry Numbers: 1333-74-0 7440-32-6

CA087181452070
Qualitative analysis of thin gallium nitride films with secondary ion mass spectrometry
Author: Andrews, J. Edward, Duhamel, A. P., Littlejohn, Michael A.
Location: Dep. Electr. Eng., North Carolina State Univ., Raleigh, N. C.
Section: CA079005 Publ Class: JOURNAL
Journal: Anal. Chem. Coden: ANCHAM Publ: 77 Series: 49 Issue: 11 Pages: 1536-40
Identifiers: gallium nitride analysis mass spectroscopy, secondary ion mass spectroscopy, film gallium nitride analysis , nitrogen detection gallium nitride, oxygen detection gallium nitride, carbon detection gallium nitride, hydrogen detection gallium nitride

CA087181452070
Identifiers: anal films secondary ion mass spectroscopy analysis detection gallium nitride spectrometry
CAS Registry Numbers: 25617-97-4 7727-37-9 7782-44-7 7440-44-0 1333-74-0

CA087181451400
Effect of energy selection on quantitative analysis in secondary ion microanalysis
Author: Steele, Ian M., Hutcheon, Ian D., Solberg, Todd N., Smith, Joseph V., Clayton, Robert N.
Location: Dep. Geophys. Sci., Univ. Chicago, Chicago, Ill.
Section: CA079001, CA076XXX Publ Class: JOURNAL
Journal: Int. J. Mass Spectrom. Ion Phys. Coden: IJMIBY Publ: 77 Series: 23 Issue: 4 Pages: 293-305
Identifiers: energy selection secondary ion microanalysis, mass spectroscopy secondary ion quant, plagioclase analysis secondary ion microprobe, feldspar analysis secondary microprobe

CA087181451400
Descriptors: Mass spectroscopy,secondary-ion, microprobe; Trace elements;Plagioclase
Identifiers: anal energy selection quant detn

CA087181447540
Development and applications of the quadrupole-type secondary-ion mass spectrometer (QSIMS)
Author: Kusao, Kenji, Yoshioka, Yoshiaki, Konishi, Fumiya
Location: Cent. Res. Lab., Matsushita Electr. Ind. Co., Osaka, Japan
Section: CA076011 Publ Class: JOURNAL
Journal: Natl. Tech. Rep. (Matsushita Electr. Ind. Co., Osaka) Coden: NTROAV Publ: 77 Series: 23 Issue: 1 Pages: 14-23 Language: Japan
Identifiers: secondary ion mass spectrometer, quadrupole type mass spectrometer

CA087181447540
Descriptors: Mass spectrometers and spectrographs,quadrupole secondary-ion

CA087181447470
Study of the nature of the mass spectra of positive and negative secondary ions knocked out by an argon(1+) ion beam from the surface of Group III-V semiconductors
Author: Koval, A. G., Mel'nikov, V. N., Seryugina, A. S., Enukov, Yu. V., Bondar, S. A., Eroshkin, N. V.
Location: Khar'k. Gos. Univ. im. Gork'ogo, Kharkov, USSR
Section: CA076011 Publ Class: TECH REP
Journal: Deposited Doc. Coden: DBDEP2 Publ: 75 Issue: VINITI 2783-75. Pages: 73-82 Language: Russ
Avail: BLLD
Identifiers: secondary ion mass spectra, aluminum gallium arsenide ion emission, phosphide gallium secondary ion emission

CA087181447470
Descriptors: Mass spectra;Ions in gases
Identifiers: solid soln. gallium arsenide secondary emitted bombarded argon aluminum compounds properties Group III V semiconductors seondary emission
CAS Registry Numbers: 22831-42-1D 1303-00-0D 12063-98-8 14791-69-6

CA087221717367
Semiquantitative analysis by secondary ion mass spectrometry
Author: Morgan, A. E., Werner, H. W.
Location: Philips G.m.b.H. Forschungslab. Hamburg, Hamburg, Ger.
Section: CA057001, CA053XXX, CA056XXX, CA073XXX, CA079XXX Publ Class: JOURNAL
Journal: J. Microsc. Spectrosc. Electron. Coden: JMSEDI Publ: 77 Series: 2 Issue: 3 Pages: 285-90
Identifiers: glass analysis ion mass spectrometry, mineral analysis ion mass spectrometry, alloy analysis ion mass spectrometry

CA087221717367
Descriptors: Glass,oxide;Alloys,analysis;Minerals
Identifiers: detn secondary ion mass spectrometry borosilicate
CAS Registry Numbers: 7439-98-7 7429-90-5 7440-21-3 1309-48-4 1305-78-8 7440-32-6 7439-96-5 7440-02-0 7439-89-6 7440-50-8 7440-66-6 7440-67-7 7440-06-4 7439-92-1 7440-61-1 7440-42-8 7440-09-7 7439-95-4 7440-23-5 7782-44-7 7440-24-6

CA087201604387
Use of an electron gun for insulator analysis with an ion analyzer
Author: Blanchard, B., Carrier, P., Hilleret, N., Marguerite, J. L., Rocco, J. C.
Location: CEN, Grenoble, Fr.
Section: CA076003 Publ Class: CONF PROC
Journal: Colloq. Spectrosc. Int., (Proc.), 18th Coden: 36IFA4 Publ: 75 Series: 3, Pages: 918-24 Language: Fr
Publisher: G.A.M.S. Address: Paris, Fr
Identifiers: electron gun insulator analysis, secondary ion emission insulator, boron profile silica garnet, sodium profile silica, silica boron sodium profile, garnet boron sodium profile, rare earth garnet profile, ferrite rare earth profile, gallate rare earth profile

CA087201604387
Descriptors: Electron guns;Mass spectroscopy,secondary-ion; Electric insulators and Dielectrics;Rare earth metals,gallate--ferrite,compounds;Ferrite substances,garnet
Identifiers: uses miscellaneous anal layers emission techniques isotope 11 insulating contg silicon dioxide laters
CAS Registry Numbers: 7631-86-9 7440-42-8D 7440-23-5

CA087201574515
Surface structure of inorganic solid by secondary ion mass spectrometer
Author: Kyoto, Michihisa, Bando, Yoshichika
Location: Inst. Chem. Res., Kyoto Univ., Uji, Japan
Section: CA066000, CA067XXX, CA075XXX Publ Class: JOURNAL
Journal: Kagaku (Kyoto) Coden: KAKYAU Publ: 77 Series: 32 Issue: 2 Pages: 148-50 Language: Japan
Identifiers: crystal structure mass spectroscopy review, catalyst surface mass spectroscopy review

CA087201574515 R
Descriptors: Surface structure;Mass spectroscopy,secondary--ion;Crystal structure determination
Identifiers: detn inorg solids inorganic surfaces

CA087201526997
Use of secondary-emission mass spectrometry to determine the mutual orientation of monomer units in macromolecules of fluorine-containing copolymers
Author: Tantsyrev, G. D., Povolotskaya, M. I., Kleimenov, N. A.
Location: Inst. Khim. Fiz., Moscow, USSR
Section: CA035006 Publ Class: JOURNAL
Journal: Vysokomol. Soedin., Ser. A Coden: VYSAAF Publ: 77 Series: 19 Issue: 9 Pages: 2057-65 Language: Russ
Identifiers: mass spectrometry polymer microstructure, fluoroethylene vinylidene fluoride copolymer, chlorotrifluoro-ethylene vinylidene fluoride copolymer

CA087201526997
Descriptors: Chains,chemical;Mass spectroscopy,secondary-ion
Identifiers: microstructure detn spectrometry fluorine contg polymers methods
CAS Registry Numbers: 25684-76-8 9010-75-7

CA087181452817
Revised calculation of oxygen concentration in the LTE model
Author: Brown, J. D., Von Rosenstiel, A. P.
Location: Metaalinst., TNO, Apeldoorn, Neth.
Section: CA079006 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 76 Series: 11, Pages: Paper No. 40, 3 pp.
Identifiers: oxygen calcn local thermodynamic equil, secondary ion mass spectroscopy, mass spectroscopy oxygen calcn

CA087181452817
Identifiers: analysis calcn concn local thermodn equil model secondary ion mass spectroscopy
CAS Registry Numbers: 7782-44-7

CA087221771S1X
Study of the chemical emission in the copper-nickel, nickel-iron, iron-aluminum, and copper-aluminum alloys
Author: Limoge, Yves, Maurice, Francoise, Seran, Jean Louis
Location: CEN Saclay, CEA, Gif-sur-Yvette, Fr.
Section: CA079006 Publ Class: JOURNAL
Journal: J. Microsc. Spectrosc. Electron. Coden: JMSEDI Publ: 77 Series: 2 Issue: 3 Pages: 323-5 Language: Fr
Identifiers: chem ion emission alloy, copper alloy chem ion emission, nickel alloy chem ion emission, iron alloy chem ion emission, aluminum alloy chem ion emission

CA087221771S1X
Descriptors: Alloys,analysis;Mass spectroscopy,secondary ion
Identifiers: nonbase chem emission
CAS Registry Numbers: 11101-28-3 11148-32-6 11114-60-6 11099-19-7

CA087221769750G
Qualitative and quantitative analysis of surfaces by mass spectrometry of secondary ions
Author: Steiger, W.
Location: Philos. Fak., Univ. Vienna, Vienna, Austria
Section: CA079001, CA076XXX Publ Class: TECH REP
Journal: Report Coden: D2REPU Publ: 75 Issue: INIS-mf-3379, Pages: 124 pp. Language: Ger
Citation: INIS Atomindex 1977, 8(15), Abstr. No. 319618
Avail: INIS
Identifiers: secondary ion mass spectroscopy analysis, ion microprobe mass spectroscopy analysis, surface analysis mass spectroscopy, peak switcher mass spectrometer

CA087221769750G
Descriptors: Mass spectrometers and spectrographs,secondary-ion, peak switcher;Surface;Mass spectroscopy,secondary-ion
Identifiers: anal surfaces

CA087221763330W
Evaluation of a cesium positive ion source for secondary ion mass spectrometry
Author: Storms, H. A., Brown, K. F., Stein, J. D.
Location: Vallecitos Nucl. Cent., Gen. Electr. Co., Pleasanton, Calif.
Section: CA076011, CA079XXX, CA080XXX Publ Class: JOURNAL
Journal: Anal. Chem. Coden: ANCHAM Publ: 77 Series: 49 Issue: 13 Pages: 2023-30
Identifiers: cesium ion source mass spectrometry, secondary ion mass spectrometry

CA087221763330W
Descriptors: Mass spectroscopy,secondary-ion;Ion sources
Identifiers: uses miscellaneous spectrometry cesium pos
CAS Registry Numbers: 18459-37-5

CA087221762490Y
SIMS evaluation of contamination on ion-cleaned (100) indium phosphide substrates
Author: Dowsett, M. G., King, R. M., Parker, E. H. C.
Location: Dep. Phys., Sir John Cass Sch. Sci. Technol., London, Engl.
Section: CA076004 Publ Class: JOURNAL
Journal: Appl. Phys. Lett. Coden: APPLAB Publ: 77 Series: 31 Issue: 8 Pages: 529-31
Identifiers: indium phosphide substrate contamination, surface cleaning indium phosphide substrate, sputtering indium phosphide substrate cleaning

CA087221762490Y
Descriptors: Sputtering
Identifiers: uses miscellaneous ion cleaning substrate contamination detn surface contaminant indium phosphide
CAS Registry Numbers: 22398-80-7 7782-44-7 7440-74-6 14791-69-6

CA087221745060F
Investigation of the diffusional behavior of cesium in silicon carbide layers by mass-spectroscopy of secondary ions
Author: Pichlmayer, F.
Location: Philos. Fak., Univ. Vienna, Vienna, Austria
Section: CA071006 Publ Class: TECH REP
Journal: Report Coden: D2REPU Publ: 75 Issue: INIS-mf-3380, Pages: 112 pp. Language: Ger
Citation: INIS Atomindex 1977, 8(15), Abstr. No. 322332
Avail: INIS
Identifiers: cesium diffusion silicon carbide, mass spectroscopy secondary ion, coated fuel particle cesium 133

CA087221745060F
Descriptors: Nuclear reactor fuels and fuel elements;Coating materials;Diffusion
Identifiers: properties silicon carbide layers mass spectroscopy secondary ions study cesium diffusional behavior through coatings 133 particles
CAS Registry Numbers: 7440-46-2 409-21-2 7440-46-2

CA087241930746
Quantitation of secondary ion mass spectrometric images by microphotodensitometry and digital image processing
Author: Fassett, J. D., Roth, J. R., Morrison, G. H.
Location: Dep. Chem., Cornell Univ., Ithaca, N. Y.
Section: CA079001 Publ Class: JOURNAL
Journal: Anal. Chem. Coden: ANCHAM Publ: 77 Series: 49 Issue: 14 Pages: 2322-9
Identifiers: photog image quantitation mass spectroscopy, secondary ion mass spectroscopy quantitation, microphotodensitometry image quantitation mass spectroscopy, densitometry image quantitation mass spectroscopy, digital image processing mass spectroscopy, computer application mass spectroscopy

CA087241930746
Descriptors: Mass spectroscopy,secondary-ion, microprobe; Computer application;Computer program;Densitometry,microphoto-
Identifiers: quantitation photog images microphotodensitometry digital image processing spectroscopic IONPIX

CA087241926402
Use of the mass spectrometry of secondary ions method for studying processes on the surface and inside solids
Author: Koval, A. G.
Location: USSR
Section: CA076011 Publ Class: JOURNAL
Journal: Diagnostika Poverkhnosti Ionnymi Puchkami Coden: DSJOUC Publ: 77 Pages: 27-51 Language: Russ
Citation: Ref. Zh., Fiz., E 1977, Abstr. No. 9E457
Identifiers: mass spectrometry surface solid, secondary ion mass spectrometry

CA087241926402
Descriptors: Mass spectroscopy,secondary-ion;Surface;Solids
Identifiers: studies spectrometry study

CA087241898490
A study of the interaction of oxygen with chromium using ion bombardment induced photon and secondary ion emission
Author: MacDonald, R. J., Martin, P. J.
Location: Dep. Phys., Aust. Natl. Univ., Canberra, Aust.
Section: CA066003, CA076XXX Publ Class: JOURNAL
Journal: Surf. Sci. Coden: SUSCAS Publ: 77 Series: 67 Issue: 1 Pages: 237-50
Identifiers: mass spectroscopy secondary ion oxygen, oxygen chromium bombardment argon ion

CA087241898490
Descriptors: Mass spectroscopy,secondary-ion;Photon
Identifiers: properties interaction chromium bombardment argon ions oxygen uses miscellaneous presence emission metals effect

CAS Registry Numbers: 7782-44-7 7440-47-3 14791-69-6 7440-47-3DP 11118-57-3D

CA087241896382
An ion-electron converter with scintillation counter
Author: Hinz, A., Rogaschewski, S.
Location: Sekt. Phys., Humboldt-Univ., Berlin, E. Ger.
Section: CA065001, CA076XXX, CA079XXX Publ Class: JOURNAL
Journal: Exp. Tech. Phys. Coden: EXPPAL Publ: 77 Series: 25 Issue: 4 Pages: 353-9 Language: Ger
Identifiers: scintillation counter ion detector, secondary ion mass spectroscopy detector, reflection ion spectroscopy detector, spectroscopy ion reflection detector

CA087241896382
Descriptors: Ion beams;Radiation counters,scintillation;Mass spectrometers and spectrographs,secondary-ion;Spectrometers,ion-scattering
Identifiers: detector ions

CA08726210565K
Possibility of determining nickel and cobalt impurities on the surface of platinum by using secondary ion-ion emission
Author: Kuchaev, V. L., Nikitushina, L. N.
Location: Khar'k. Gos. Univ. im. Gor'kogo, Kharkov, USSR
Section: CA079006 Publ Class: TECH REP
Journal: Deposited Doc. Coden: D8DEP2 Publ: 75 Issue: VINITI 2783-75, Pages: 34-7 Language: Russ
Avail: BLLD
Identifiers: nickel detn platinum surface, cobalt detn platinum surface, platinum surface analysis cobalt nickel, carbon monoxide analysis cobalt nickel, mass spectroscopy secondary ion

CA08726210565K
Identifiers: analysis detn carbon monoxide platinum surface secondary ion mass spectroscopy cobalt nickel carbonyl preconcn
CAS Registry Numbers: 7440-48-4 7440-02-0 7440-06-4 630-08-0

CA08726210500K
Mass spectrometric apparatus with double analysis of secondary ions
Author: Sidorenko, Yu. V., Koval, A. G., Kozlov, V. F.
Location: Khar'k. Gos. Univ. im. Gor'kogo, Kharkov, USSR
Section: CA079002, CA076XXX Publ Class: TECH REP
Journal: Deposited Doc. Coden: D8DEP2 Publ: 75 Issue: VINITI 2783-75, Pages: 114-18 Language: Russ
Avail: BLLD
Identifiers: mass spectrometer secondary ion, double analysis secondary ion

CA08726210500K
Descriptors: Mass spectrometers and spectrographs,secondary--ion;Solids
Identifiers: double anal ions layer spectroscopy

CA08726210494M
A comparison of quantitative models for SIMS analysis
Author: Ruedenauer, F. G.
Location: Oesterr. Studienges. Atomenerg. m.b.H., Vienna, Austria
Section: CA079001 Publ Class: JOURNAL
Journal: Mikrochim. Acta, Suppl. Coden: MKASAK Publ: 77 Series: 7, Pages: 85-94
Identifiers: quant model mass spectroscopy, secondary ion mass spectroscopy model

CA08726210494M
Descriptors: Mass spectroscopy,secondary-ion
Identifiers: anal quant model

CA08726210479K
Applications of secondary ion mass spectrometry (SIMS)
Author: Werner, H. W.
Location: Philips Res. Lab., Eindhoven, Neth.
Section: CA079000 Publ Class: JOURNAL
Journal: Mikrochim. Acta, Suppl. Coden: MKASAK Publ: 77 Series: 7, Pages: 63-83
Identifiers: review secondary ion mass spectroscopy

CA08726210479K R
Descriptors: Mass spectroscopy,secondary-ion
Identifiers: anal

CA08724193083G
Computer aided material analysis
Author: Nagai, Takeshi, Usui, Makoto, Naka, Toshi
Location: Japan
Section: CA079002 Publ Class: JOURNAL
Journal: Fujitsu Sci. Tech. J. Coden: FUSTA4 Publ: 77 Series: 13 Issue: 2 Pages: 93-107
Identifiers: automation analytical instrument, gas chromatograph automation, gel chromatograph automation, mass spectrometer automation, IR spectrometer automation, ion microanalyzer automation, computer application analysis

CA08724193083G
Descriptors: Chromatography,gas, app.;Chromatography,gel, app.;Spectrometers,IR;Mass spectrometers and spectrographs; Mass spectrometers and spectrographs,secondary-ion, microprobe ;Automation;Chromatography,gas;Chromatography,gel; Spectrochemical analysis,IR;Mass spectroscopy;Mass spectroscopy,secondary-ion, microprobe;Computer application
Identifiers: instruments

DIALOG File4: CA CONDENS/CASIA 77-VOL88(20) (Copr. Am. Chem. Soc.) (Item 85 of 140) User4930 18may78

CA088020014689K
Secondary ion mass spectrometry. A review of recent advances
Author: Evans, Charles A., Jr.
Location: Dep. Chem., Univ. Illinois, Urbana, Ill.
Section: CA076000, CA079XXX Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 128A-128F
Identifiers: review secondary ion mass spectrometry

CA088020014689K R
Descriptors: Mass spectroscopy,secondary-ion

CA088020012284A
The routine application of the SIMS/SEM/EDXA combination to practical surface problems
Author: Fasiska, Edward J., Janocko, Philip B.
Location: Mater. Consultants Lab., Inc., USA
Section: CA066000, CA079XXX Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 76A-76B
Identifiers: review surface analysis combined method, mass spectroscopy surface review, electron microscopy surface review, x ray analysis surface review

CA088020012284A R
Descriptors: Mass spectroscopy,secondary-ion;Microscopy,electron, scanning;X-ray analysis,energy-dispersive;Surface
Identifiers: study combination methods including practical problems

CA088020007822V
Study of adhesive bonding and bond failure surfaces using ISS-SIMS
Author: Baun, W. L.
Location: Mech. Surf. Interactions Branch, Air Force Mater. Lab., Wright-Patterson AFB, Ohio
Section: CA036005, CA055XXX Publ Class: JOURNAL
Journal: Pap. Meet. - Am. Chem. Soc., Div. Org. Coat. Plast. Chem. Coden: ACOCA0 Publ: 76 Series: 36 Issue: 1 Pages: 344-9
Identifiers: ion scattering spectroscopy adhesive, mass spectroscopy ion adhesive, adhesion metal spectroscopic characterization, epoxy adhesion spectroscopic characterization

CA088020007822V
Descriptors: Adhesives;Epoxy resins,uses and miscellaneous; Spectrometry,ion-scattering;Mass spectroscopy,secondary-ion; Adhesion
Identifiers: contg failure mechanism spectroscopic evaluation substances bonded base characterization titanium dioxide metal alloy
CAS Registry Numbers: 13463-67-7 37301-61-4 12616-84-1

CA087262106230
Influence of charge effects on the analysis of insulating mineralogical samples by ion emission
Author: Slodzian, G., Dennebouy, R., Havette, A.
Location: Lab. Phys. Solides, Univ. Paris Sud, Orsay, Fr.
Section: CA079006 Publ Class: CONF PROC
Journal: Colloq. Spectrosc. Int., (Proc.), 18th Coden: 36IFA4 Publ: 75 Series: 2, Pages: 590-5 Language: Fr
Publisher: G. A. M. S. Address: Paris, Fr
Identifiers: charge effect insulating mineral analysis, mass spectroscopy analysis charge effect, secondary ion mass spectroscopy mineral

CA087262106230
Descriptors: Electric insulators and Dielectrics;Minerals; Mass spectroscopy,secondary-ion
Identifiers: anal charge effect insulating mineralogical samples

CA087262105660
Use of secondary-ion mass spectroscopy for analysis of the composition of some nonconducting single crystals
Author: Chaikovskii, E. F., Evseev, V. M., Zhiglov, Yu. S.
Location: Khar'k. Gos. Univ. im. Gor'kogo, Kharkov, USSR
Section: CA079006, CA076XXX Publ Class: TECH REP
Journal: Deposited Doc. Coden: D8DEP2 Publ: 75 Issue: VINITI 2783-75, Pages: 54-8 , Language: Russ
Avail: BLLD
Identifiers: secondary ion mass spectroscopy nonconducting, nonconducting single crystal analysis, alkali metal halide analysis, potassium chloride analysis, aluminum yttrium garnet analysis, ruby analysis

CA087262105660
Descriptors: Mass spectroscopy,secondary-ion
Identifiers: analysis anal nonconducting single crystals
CAS Registry Numbers: 7447-40-7 12174-49-1 12005-21-9

CA088020153931W
Combined SIMS/SEM for three dimensional surface analysis
Author: Sparrow, Gene R.
Location: 3M Cent., 3M Anal. Syst., St. Paul, Minn.
Section: CA079000, CA066XXX Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 78A-78B
Identifiers: review three dimensional surface analysis, secondary ion mass spectroscopy review, mass spectroscopy surface analysis review, scanning electron microscopy surface review, electron microscopy surface analysis review

CA088020153931W R
Descriptors: Mass spectroscopy,secondary-ion;Microscopy,electron, scanning;Surface structure
Identifiers: combined 3 dimensional anal

CA088020149471
Irradiation effects in SIMS analysis, their consequences on depth resolution
Author: Limoge, Y., Seguin, R., Seran, J. L.
Location: CEN, CEA, Saclay, Fr.
Section: CA076011, CA079XXX Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Nicroanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 136A-136B
Identifiers: secondary ion mass spectrometry irradn, silicon secondary ion mass spectrometry, silica secondary ion mass spectrometry, aluminum secondary ion mass spectrometry, nickel secondary ion mass spectrometry, copper secondary ion mass spectrometry

CA088020149471
Descriptors: Mass spectroscopy,secondary-ion
Identifiers: properties film substrate systems irradn effects depth resoln effect anal relation
CAS Registry Numbers: 7440-21-3 7631-86-9 7440-02-0 7429-90-5 7440-50-8

CA088020149465
Improved SIMS depth profiles by control of sample surface potential
Author: Whatley, T. A., Conrad, R. L., Fralick, R. D.
Location: Appl. Res. Lab., Sunland, Calif.
Section: CA076011, CA079XXX Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 135A-135E
Identifiers: secondary ion mass spectrometry, surface potential control mass spectrometry

CA088020149465
Descriptors: Mass spectroscopy,secondary-ion;Electric potential,surface
Identifiers: control sample improved depth profiles samples

CA088020149451R
DIDA - a multipurpose scanning ion microprobe
Author: Wittmaack, K.
Location: Phys.-Tech. Abt., Ges. Strahlen- und Umweltforsch. m.b.H., Neuherberg, Ger.
Section: CA076011, CA079XXX Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 131A-131C
Identifiers: scanning ion microprobe DIDA, mass spectrometer secondary ion

CA088020149451R
Descriptors: Mass spectrometers and spectrographs,secondary-ion;Analysis,ion microprobe;Biological materials
Identifiers: multipurpose scanning based app study

CA088020149440
Extension of SEM capabilities with SIMS
Author: Nauman, D. A.
Location: West. Electr., Indianapolis, Indiana
Section: CA076011 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 77A-77E
Identifiers: scanning electron microscopy SIMS, secondary on mass spectrometry microscopy, film circuit microscopy spectrometry

CA088020149440
Descriptors: X-ray analysis,energy-dispersive;Electric circuits,film;Microscopes,scanning electron;Mass spectroscopy-,secondary-ion
Identifiers: combined study thin spectrometry

CA088030018515Y
Empirical standards for quantitative analysis of biological tissues by secondary ion mass spectrometry
Author: Bellnorn, Margaret B., File, David M.
Location: Albert Einstein Coll. Med., Bronx, N. Y.
Section: CA009004 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD3 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 137A-137B
Identifiers: mass spectrometry secondary ion, biol tissue mass spectrometry, trace element mass spectrometry

CA088030018515Y
Descriptors: Mass spectroscopy,secondary-ion;Trace elements; Gelatins,analysis;Standard substances
Identifiers: detn biol material spectrometry film stds lipid-sol. derivs. compounds tissue vol metal tissues films std
CAS Registry Numbers: 7439-93-2 7440-17-7 7440-24-6 7440-50-8 7440-62-2D

CA088020155291
Analyzer with ion microprobe
Author: Tamura, Hifumi, Ishitani, Toru, Hirano, Tokuro
Location: Japan
Section: CA079002 Publ Class: PAT
Journal: Ger. Offen. Coden: GWXXBX Publ: 770728 Pages: 19 pp.
Identifiers: insulator analysis ion microprobe, film thin analysis ion microprobe, surface charging ion microprobe, ion microprobe beam selection app
Patent No: 2659385 Applic No: 76/4928 Date: 760121 Class: G01N23/225 Country: Japan.
Assignee: Hitachi, Ltd.

CA088020155291 P
Descriptors: Electric insulators and Dielectrics;Films,thin; Mass spectroscopy,secondary-ion;Mass spectrometers and spectrographs,secondary-ion
Identifiers: anal app primary beam selection nonconducting selector

CA088020155271
Analysis using an iron microanalyzer
Author: Aizawa, Masayoshi, Okajima, Yoshiaki
Location: Japan
Section: CA079001 Publ Class: PAT
Journal: Japan. Kokai Coden: JKXXAF Publ: 770726 Pages: 4 pp.
Identifiers: secondary ion mass spectroscopy analysis, halogen scavenger mass spectroscopy, bromine scavenger mass spectroscopy
Patent No: 77 89381 Applic No: 76/5734 Date: 760121 Class: G01N23/221
Assignee: Hitachi, Ltd.

CA088020155271 P
Descriptors: Halogens;Mass spectroscopy,secondary-ion
Identifiers: uses miscellaneous scavenger hydrogen addn ionization chamber anal
CAS Registry Numbers: 7726-95-6

CA088020155061
Some results on the quantitative analysis of silicates
Author: Slodzian, G., Havette, A.
Location: Lab. Phys. Solide, Univ. Paris-Sud, Orsay, Fr.
Section: CA079006 Publ Class: JOURNAL
Journal: J. Microsc. Spectrosc. Electron. Coden: JMSEDI Publ: 77 Series: 2 Issue: 1 Pages: 81-5 Language: Fr
Identifiers: silicate rock analysis mass spectroscopy, charge effect rock analysis, secondary ion mass spectroscopy rock

CA088020155061
Descriptors: Rocks,silicate;Mass spectroscopy,secondary-ion
Identifiers: anal charge effect

CA088020154071
Correction of secondary ion intensity by a new total ion monitoring method
Author: Kobayashi, H., Suzuki, K., Yukawa, K., Tamura, H., Ishitani, T.
Location: Fund. Res. Lab., Nippon Steel Corp., Kawasaki, Japan
Section: CA079001 Publ Class: JOURNAL
Journal: Rev. Sci. Instrum. Coden: RSINAK Publ: 77 Series: 48 Issue: 10 Pages: 1298-302
Identifiers: microprobe analysis secondary ion monitor, steel fracture surface microprobe analysis, shadow mask ion microprobe analysis

CA088020154071
Descriptors: Surface;Mass spectroscopy,secondary-ion;Mass spectrometers and spectrographs,secondary-ion
Identifiers: anal total monitoring method surfaces monitor

DIALOG File4: CA CONDENS/CASIA 77-VOL88(20) (Copr. Am. Chem. Soc.) (Item 70 of 140) User4930 18may78

CA088040310459
Measurement of depth profiles of boron atoms implanted in polycrystalline silicon by IMA
Author: Kang, Suk Tai, Shimizu, Ryuichi, Kosnikawa, Takanori
Location: Dep. Appl. Phys., Osaka Univ., Osaka, Japan
Section: CA076013 Publ Class: JOURNAL
Journal: Technol. Rep. Osaka Univ. Coden: TROUAI Publ: 77 Series: 27 Issue: 1364-1393 Pages: 327-34
Identifiers: boron depth profile polycryst silicon, secondary ion mass spectrometry implant

CA088040310459
Descriptors: Mass spectroscopy,secondary-ion
Identifiers: properties depth profile atoms implanted polycryst silicon boron atom implantation studies accuracy
CAS Registry Numbers: 7440-42-8 7440-21-3

CA088040310225
A new secondary ion emission microanalyzer
Author: Rouberol, J. M., Lebareur, M., Autier, B., Gourgout, J. M.
Location: Soc. Cie. Appl. Mec. Electron. Cinema At., Courbevoie, Fr.
Section: CA076011, CA079XXX Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 133A-133D
Identifiers: secondary ion mass spectrometer, microanalyzer secondary ion, analyzer micro secondary ion

CA088040310225
Descriptors: Mass spectrometers and spectrographs,secondary-ion;Analysis
Identifiers: microanalyzer based

CA088040302221
Spectrometer for Auger electrons and secondary ions
Author: Hladil, Karel, Vasina, Petr, Salek, Robert, Fiser, Jan, Stulik, Dusan
Location: Ustav Pristrojove Tech., CSAV, Brno, Czech.
Section: CA073008, CA076XXX Publ Class: JOURNAL
Journal: Cesk. Cas. Fyz. Coden: CKCFAH Publ: 77 Series: 27 Issue: 5 Pages: 490-4 Language: Czech
Identifiers: spectrometer Auger secondary ion

CA088040302221
Descriptors: Mass spectrometers and spectrographs,secondary-ion;Spectrometers,Auger
Identifiers: combined Auger

CA088040281719
The use of secondary ion mass spectrometry for studies of oxygen adsorption and oxidation
Author: Wittmaack, K.
Location: Phys.-Tech. Abt., Ges. Strahlen- und Umweltforsch. m.b.H., Neuherberg, Ger.
Section: CA066003 Publ Class: JOURNAL
Journal: Surf. Sci. Coden: SUSCAS Publ: 77 Series: 68, Pages: 118-29
Identifiers: secondary ion mass spectroscopy adsorption, adsorption oxygen mass spectroscopy, oxidn silicon tantalum mass spectroscopy, silicon adsorption oxygen oxidn, tantalum adsorption oxygen oxidn

CA088040281719
Descriptors: Mass spectroscopy,secondary-ion;Adsorption; Oxidation
Identifiers: properties silicon tantalum oxidn relation oxygen study
CAS Registry Numbers: 7782-44-7 7440-21-3 7440-25-7

CA088040271659
SAM, SIMS investigation of platinum films on yttria-stabilized zirconia
Author: Lawson, K. E., Rusnak, R. M.
Location: Mater. Chem. Dep., Bendix Res. Lab., Southfield, Mich.
Section: CA059002, CA066XXX Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 75A-75B
Identifiers: platinum oxidn exhaust gas analyzers

CA088040271659
Descriptors: Exhaust gases
Identifiers: analysis oxygen analyzers contg anal platinum oxide formation uses miscellaneous yttria stabilized support coatings sensing concn detn films zirconia film
CAS Registry Numbers: 7440-06-4 1314-23-4 12035-82-4 1314-15-4 7782-44-7 1314-36-9

CA08806044383Y
A computerized CAMECA ion pr[illegible] system
Author: Roth, James R., Mor[illegible]son, G. H.
Location: Dep. Chem., Co[illegible]ell Univ., Ithaca, N. Y.
Section: CAC79002 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 48A-48C
Identifiers: computerized ion microprobe

CA08806044383Y
Descriptors: Mass spectroscopy,secondary ion microprobe;Mass spectrometers and spectrographs,secondary ion microprobe, computerized;Computer application

CA08806044379B
Quantitative ion microprobe mass analysis using negative secondary ions
Author: Brown, J. D., Short, James M.
Location: Fac. Eng. Sci., Univ. West. Ont., London, Engl.
Section: CA079001 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 138A-138B
Identifiers: computer program ion microprobe analysis, neg secondary ion mass analysis

CA08806044379B
Descriptors: Mass spectroscopy,microprobe;Computer program
Identifiers: measuring neg secondary ion spectra quant anal

CA08806043952W
Secondary ion mass spectroscopy (SIMS)
Author: Sroubek, Zdenek, Zavadil, Jiri, Kubec, Frantisek
Location: Ustav Radiotech. Elektron., CSAV, Prague, Czech.
Section: CA076000 Publ Class: JOURNAL
Journal: Cesk. Cas. Fyz. Coden: CKCFAH Publ: 77 Series: 27 Issue: 5 Pages: 451-9 Language: Czech
Identifiers: review secondary ion mass spectroscopy

CA08806043952W R
Descriptors: Mass spectroscopy,secondary-ion;Films,thin; Surface
Identifiers: solid state anal

CA08806042868M
Use of Auger electron spectroscopy profile analysis and secondary ion mass spectrometry in the study of changes in surface layer composition
Author: Schneider, Helga
Location: Inst. Mater.- Festkoerperforsch., Kernforschungzent. Karlsruhe, Karlsruhe, Ger.
Section: CA071005, CA073XXX Publ Class: JOURNAL
Journal: Mikrochim. Acta Coden: MIACAQ Publ: 77 Series: 2 Issue: 5-6 Pages: 437-47 Language: Ger
Identifiers: Auger electron spectroscopy profile analysis, secondary ion mass spectrometry, surface layer compn change, sodium corrosion mass transfer, Stellite 6B corrosion sodium, reactor material corrosion sodium

CA08806042868M
Descriptors: Mass transfer;Nuclear reactors,breeder, liq. metal fast;Electron emission spectroscopy,Auger;Mass spectroscopy,secondary-ion
Identifiers: base surface layer compn changes exposure sodium reactions corrosion Stellite 6B relation study
CAS Registry Numbers: 12671-96-4 7440-23-5

CA08806039791A
Study of the mass spectra of secondary products of natural mineral deposits using the MI-1305 Mass spectrometer
Author: Chupalaev, Ch. M., Magomedov, Sh. A., Guseinov, A. A., Balyrmurzaev, A. S.
Location: Khar'k. Gos. Univ. im. Gork'ogo, Kharkov, USSR
Section: CA053001, CA076XXX Publ Class: TECH REP
Journal: Deposited Doc. Coden: D8DEP2 Publ: 75 Issue: VINITI 2783-75, Pages: 107-10 Language: Russ
Avail: BLLD
Identifiers: quartz ion mass spectrum, calcite ion mass spectrum, microcline ion mass spectrum, phlogopite ion mass spectrum, mineral ion mass spectrum

CA08806039791A
Descriptors: Mass spectra
Identifiers: properties electron bombarded minerals
CAS Registry Numbers: 14808-60-7 13397-26-7 12251-43-3 12251-58-0

DIALOG File4: CA CONDENS/CASIA 77-VOL88(20) (Copr. Am. Chem. Soc.) (Item 60 of 140) User4930 18may78

CA098080057935E
Quantitative analysis of high temperature alloys with an ion microanalyzer
Author: Okazima, Yoshiaki, Aizawa, Yukiyoshi
Location: Hitachi Res. Lab., Hitachi Ltd., Hitachi, Japan
Section: CA079006 Publ Class: JOURNAL
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 77 Series: 25 Issue: 1 Pages: 91-7
Identifiers: aluminum detn mass spectroscopy, cobalt detn mass spectroscopy, chromium detn mass spectroscopy, iron detn mass spectroscopy, manganese detn mass spectroscopy, niobium detn mass spectroscopy, nickel detn mass spectroscopy, titanium detn mass spectroscopy, mass spectroscopy secondary ion alloy, ion microprobe mass spectroscopy alloy, alloy analysis mass spectroscopy

CA088080057935E
Descriptors: Alloys,analysis;Mass spectroscopy,secondary-ion
Identifiers: detn high temp
CAS Registry Numbers: 7439-96-5 7440-02-0 7440-47-3 7439-89-6 7440-48-[illegible] 7440-32-6 7429-90-5 7440-03-1

CA088080057282Q
Plenary lecture: ion microscopy and surface analysis
Author: Morrison, G. H.
Location: Dep. Chem., Cornell Univ., Ithaca, N. Y.
Section: CA076000, CA066XXX Publ Class: CONF PROC
Journal: Charact. Met. Polym. Surf., (Symp.) Coden: 37DMA7 Publ: 77 Series: 1, Pages: 351-66 Meeting Date: 76
Publisher: Academic Address: New York, N. Y
Avail: Lee, Lieng-Huang
Identifiers: review ion microscopy mass spectroscopy, surface analysis mass spectroscopy review

CA088080572820 R
Descriptors: Mass spectroscopy,secondary-ion;Microscopy,ion
Identifiers: surface anal spectrometry

CA088080541214A
Quantitative analysis of glasses by secondary ion mass spectrometry
Author: Newbury, Dale E.
Location: Anal. Chem. Div., Natl. Bur. Stand., Washington, D. C.
Section: CA057001, CA079XXX Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 140A-140F
Identifiers: glass analysis mass spectrometry

CA088080541214A
Descriptors: Glass,oxide
Identifiers: anal secondary ion mass spectrometry

CA088060044481D
Matrix species ratio method for quantitative ion probe analysis
Author: Ganjei, John D., Leta, Daniel P., Roth, James R., Morrison, George H.
Location: Dep. Chem., Cornell Univ., Ithaca, N. Y.
Section: CA079006 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 139A-139C
Identifiers: matrix species ratio ion microprobe, quant ion microprobe analysis

CA088060044481D
Descriptors: Mass spectroscopy,secondary ion; microprobe
Identifiers: matrix species ratio method

CA088100685855
Quantitative ion probe measurement using matrix ion species ratios
Author: Ganjei, J. D., Leta, D. P., Morrison, G. H.
Location: Dep. Chem., Cornell Univ., Ithaca, N. Y.
Section: CA079006 Publ Class: JOURNAL
Journal: Anal. Chem. Coden: ANCHAM Publ: 78 Series: 50 Issue: 2 Pages: 285-90
Identifiers: ion microprobe anal quant, calibration quant ion microprobe analysis, matrix ion species ratio microprobe, steel analysis ion microprobe, alloy analysis ion microprobe, aluminum alloy analysis ion microprobe, copper alloy analysis ion microprobe

CA088100685855
Descriptors: Mass spectroscopy,secondary-ion, microprobe;Ion beams,microprobes
Identifiers: analysis anal matrix species ratios empirical calibrations Aluminum alloy nonbase Copper quant calibration
CAS Registry Numbers: 12597-69-2

CA088100683112
Ion-implanted selenium profiles in gallium arsenide as measured by secondary ion mass spectrometry
Author: Lidow, A., Gibbons, J. F., Deline, V. R., Evans, C. A., Jr.
Location: Stanford Electron. Lab., Stanford, Calif.
Section: CA076013 Publ Class: JOURNAL
Journal: Appl. Phys. Lett. Coden: APPLAB Publ: 78 Series: 32 Issue: 1 Pages: 15-17
Identifiers: selenium implant gallium arsenide

CA088100683112
Descriptors: Diffusion
Identifiers: properties implantation profile selenium annealing effect gallium arsenide implants
CAS Registry Numbers: 1303-00-0 7782-49-2

CA088100649416
Study of adhesive bonding and bond failure surface using ISS-SIMS
Author: Baun, W. L.
Location: Mech. Surf. Interactions Branch, Air Force Mater. Lab., Wright-Patterson AFB, Ohio
Section: CA056009 Publ Class: CONF PROC
Journal: Charact. Met. Polym. Surf., (Symp.) Coden: 37DMA7 Publ: 77 Series: 1, Pages: 375-90 Meeting Date: 76
Publisher: Academic Address: New York, N. Y
Avail: Lee, Lieng-Huang
Identifiers: adhesive bonding failure aluminum, surface adhesive bonding failure

CA088100649416
Descriptors: Adhesives;Surface,anal.
Identifiers: bonding aluminum alloys failure relation base
CAS Registry Numbers: 37301-61-4 12616-84-1

CA088090625931
Cationization of organic molecules in secondary ion mass spectrometry
Author: Grade, H., Winograd, N., Cooks, R. G.
Location: Dep. Chem., Purdue Univ., West Lafayette, Indiana
Section: CA034002, CA022XXX Publ Class: JOURNAL
Journal: J. Am. Chem. Soc. Coden: JACSAT Publ: 77 Series: 99 Issue: 23 Pages: 7725-6
Identifiers: secondary ion mass spectra amino acid, cationization secondary ion mass spectra, metal amino acid mass spectra

CA088090625931
Descriptors: Amino acids,properties;Metals.uses and miscellaneous;Mass spectra,secondary ion
Identifiers: spectrum silver platinum aminobenzoic
CAS Registry Numbers: 150-13-0 63-91-2 7440-22-4 7440-06-4 7447-41-8

CA088080579361
Quantitative analysis of compound semiconductors with an ion microanalyzer
Author: Oshima, Masaharu
Location: Musashino Electr. Commun. Lab., Nippon Telegr. and Teleph. Public Corp., Tokyo, Japan
Section: CA079006 Publ Class: JOURNAL
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 77 Series: 25 Issue: 1 Pages: 99-108 Language: Japan
Identifiers: silicon detn mass spectroscopy, gallium arsenide analysis silicon, semiconductor analysis mass spectroscopy, secondary ion mass spectroscopy, ion microanalyzer mass spectroscopy

CA088080579361
Identifiers: analysis detn gallium arsenide secondary ion mass spectroscopy indium impurity solid solns. compounds
CAS Registry Numbers: 7440-55-3 7440-38-2 7439-96-5 7440-23-5 7439-95-4 7429-90-5 7440-21-3 7440-09-7 7440-70-2 7440-47-3 7439-89-6 7440-32-6 7440-02-0 7440-50-8 1303-00-0 1303-11-3D

DIALOG File4: CA CONDENS/CASIA 77-VOL88(20) (Copr. Am. Chem. Soc.) (Item 50 of 140) User4930 18may78

CA088120796185
SIMS-AES measurements for partially oxidized aluminum surfaces
Author: Narusawa, T., Komiya, S.
Location: ULVAC Corp., Chigasaki, Japan
Section: CA066003, CA067XXX Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 2, Pages: 1329-32
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: aluminum partially oxidized surface, Auger oxidized aluminum, mass spectroscopy oxidized aluminum

CA088120796185
Descriptors: Mass spectroscopy,secondary-ion;Electron emission spectroscopy,Auger;Oxidation,surface
Identifiers: properties partially oxidized Auger study aluminum
CAS Registry Numbers: 7429-90-5

CA088120796075
SIMS study of adsorption on nickel (110), (100) and (111)
Author: Barber, M., Bordoli, R. S., Vickerman, J. C., Wolstenholme, J.
Location: Dep. Chem., Univ. Manchester Inst. Sci. Technol., Manchester, Engl.
Section: CA066003, CA076XXX Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 2, Pages: 983-6
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: nickel adsorption mass spectroscopy, secondary ion mass spectroscopy adsorption

CA088120796075
Descriptors: Mass spectroscopy,secondary-ion;Adsorption
Identifiers: properties gases crystal faces study nickel
CAS Registry Numbers: 7440-02-0 630-08-0 1333-74-0 74-85-1

CA088120796000
A comparison of the adsorption of oxygen and carbon monoxide on molybdenum using low-energy SIMS and EID
Author: Dawson, P. H.
Location: Div. Phys., Natl. Res. Counc., Ottawa, Ont.
Section: CA066003 Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 2, Pages: 885-8
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: adsorption oxygen carbon monoxide molybdenum, secondary ion mass spectroscopy adsorption, desorption oxygen carbon monoxide molybdenum

CA088120796000
Descriptors: Adsorption;Mass spectroscopy,secondary-ion; Desorption,electron-stimulated;Electron beam,chemical and physical effects
Identifiers: properties molybdenum study carbon monoxide oxygen
CAS Registry Numbers: 7782-44-7 630-08-0 7439-98-7

CA088110737816
Study of primary and secondary acetaldehyde photoionization processes by the method of photoion-photoelectron coincidences
Author: Golovin, A. V., Sergeev, Yu. L., Akopyan, M. E., Vilesov, F. I.
Location: Leningr. Gos. Univ., Leningrad, USSR
Section: CA022002 Publ Class: JOURNAL
Journal: Teor. Eksp. Khim. Coden: TEKHA4 Publ: 77 Series: 13 Issue: 6 Pages: 769-73 Language: Russ
Identifiers: acetaldehyde photoionization, ion acetaldehyde mass spectra

CA088110737816
Descriptors: Ions in gases;Mass spectra;Ionization potential and energy
Identifiers: reactions photoionization spectrum acetaldehyde produced
CAS Registry Numbers: 75-07-0

CA088100686306
High energy implantation profiles of boron in silicon and gallium arsenide, and arsenic in silicon by ion microanalysis
Author: Gauneau, M.
Location: Cent. Natl. Etud. Telecommun., Lannion, Fr.
Section: CA079006, CA076XXX Publ Class: JOURNAL
Journal: Analusis Coden: ANLSCY Publ: 77 Series: 5 Issue: 8 Pages: 357-65 Language: Fr
Identifiers: boron concn profile detn semiconductor, silicon analysis boron arsenic, gallium arsenide analysis boron, arsenic concn profile detn silicon, ion microprobe analysis semiconductor, secondary ion mass spectroscopy semiconductor

CA088100686306
Identifiers: analysis detn concn profile gallium arsenide silicon ion microprobe anal arsenic boron
CAS Registry Numbers: 7440-42-8 7440-21-3 1303-00-0 7440-38-2

DIALOG File4: CA CONDENS/CASIA 77-VOL88(20) (Copr. Am. Chem. Soc.) (Item 45 of 140) User4930 18may78

CA088812082686G
An investigation of thin insulating films using SIMS analysis
Author: Litovchenko, V. G., Romanova, G. P., Marchenko, R. I.
Location: Inst. Semicond., Kiev, USSR
Section: CA076013, CA075XXX Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 3, Pages: 2047-50
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: silicon silica film structure, mass spectra silicon silica, annealing silicon silica film

CA088812082686G
Descriptors: Mass spectra,secondary-ion;Interface;Surface structure
Identifiers: properties silicon silica effect annealing system
CAS Registry Numbers: 7631-86-9 7440-21-3

CA088812082243K
Ion imaging in secondary ion mass spectrometry
Author: Newbury, Dale E.
Location: Inst. Mater. Res., Natl. Bur. Stand., Washington, D. C.
Section: CA076000 Publ Class: JOURNAL
Journal: Proc. Soc. Photo-Opt. Instrum. Eng. Coden: SPIECJ Publ: 77 Series: 104 Issue: Multidisciplinary Microsc. Pages: 85-9
Identifiers: review ion imaging SIMS, secondary ion mass spectrometry review

CA088812082243K R
Descriptors: Mass spectroscopy,secondary-ion
Identifiers: imaging

CA088812081931W
Molecular beam epitaxy of gallium arsenide and simultaneous characterization by RHEED, SIMS, and AES techniques
Author: Ploog, K., Fischer, A., Raisch, F.
Location: Max-Planck-Inst. Festkoerperforsch., Stuttgart, Ger.
Section: CA075001 Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 2, Pages: 1705-8
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: gallium arsenide epitaxy simultaneous characterization, tin doped arsenide epitaxy characterization

CA088812081931W
Descriptors: Epitaxy
Identifiers: properties mol beam simultaneous characterization gallium arsenide contg
CAS Registry Numbers: 1303-00-0 7440-31-5

CA088812081870A
An improved MBE apparatus permitting the use of Auger SIMS LEED and RHEED analytical methods in the same U.H.V. vessel
Author: Bouchaib, P., Buisson, C.
Location: Surf. Anal. Dep., RIBER S. A., Rueil-Malmaison, Fr.
Section: CA075000 Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 3, Pages: 2379-81
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: Auger spectrometer epitaxy review, mass spectrometer epitaxy review, electron diffractometer epitaxy review

CA088812081870A R
Descriptors: Epitaxy;Spectrometers,Auger;Mass spectrometers and spectrographs,secondary-ion;Diffractometers,electron
Identifiers: app mol beam control

CA088120814395
Auger analysis and ion mass spectrometry study of electron induced damages
Author: Le Gressus, C., Pellerin, F., Blanchard, B., Okuzumi, H.
Location: CEN, CEA, Saclay, Fr.
Section: CA073003 Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 3, Pages: 2323-5
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: Auger spectroscopy electron damage, ion mass spectroscopy electron damage

CA088120814395
Descriptors: Electron emission spectroscopy,Auger;Mass spectroscopy,ion;Electron beam,chemical and physical effects; Electron emission spectroscopy,secondary
Identifiers: properties Auger spectra study damage induced studies interactions materials
CAS Registry Numbers: 7631-86-9 7440-57-5

CA088120831540
Errors observed in quantitative ion microprobe analysis
Author: Newbury, D. E., Heinrich, K. F. J., Myklebust, R. L.
Location: Anal. Chem. Div., Natl. Bur. Stand., Washington, D. C.
Section: CA079006, CA057XXX Publ Class: TECH REP
Journal: ASTM Spec. Tech. Publ. Coden: ASTTA8 Publ: 76
Issue: STP 596, Surf. Anal. Tech. Metall. Appl., Pages. 101-13 Meeting Date: 75
Identifiers: error quant ion microprobe analysis, local thermodn equil microprobe analysis, secondary ion mass spectroscopy error, steel analysis ion microprobe error, glass analysis ion microprobe error

CA088120831540
Descriptors: Mass spectroscopy,secondary-ion, microprobe; Error
Identifiers: quant anal errors

CA088120831120
Ion microprobe analysis of plagioclase feldspars (CaxNa1-xAl1+xSi3-xO8) for major and minor elements
Author: Steele, Ian M., Hutcheon, Ian D., Solberg, Todd N., Clayton, Robert N., Smith, Joseph V.
Location: Enrico Fermi Inst., Univ. Chicago, Chicago, Ill.
Section: CA079006 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 180A-180F
Identifiers: plagioclase analysis ion microprobe, feldspar analysis ion microprobe

CA088120831120
Descriptors: Plagioclase;Feldspars;Mass spectroscopy,secondary-ion, microprobe
Identifiers: analysis detn detection electron anal
CAS Registry Numbers: 7440-70-2 7440-23-5 7429-90-5 7440-21-3 7439-95-4 7439-89-6 7440-42-8 7439-93-2 7439-96-5 7723-14-0 7440-24-6 7440-32-6 7440-62-2 7440-09-7 7440-39-3

CA088120830898
Quantitative SIMS studies with a uranium matrix
Author: Morgan, A. E., Werner, H. W.
Location: Philips Res. Lab., Eindhoven, Neth.
Section: CA079006 Publ Class: JOURNAL
Journal: Surf. Sci. Coden: SUSCAS Publ: 77 Series: 65 Issue: 2 Pages: 687-9J
Identifiers: uranium analysis impurity mass spectroscopy, impurity detn uranium mass spectroscopy, secondary ion mass spectroscopy uranium, ion microprobe mass spectroscopy uranium

CA088120830898
Identifiers: analysis impurity detn secondary ion mass spectroscopy uranium
CAS Registry Numbers: 7440-61-1 7429-90-5 7440-21-3 7440-47-3 7439-96-5 7439-89-6 7440-02-0 7440-48-4 7440-50-8 7440-67-7 7439-98-7

CA088120830330
A computer-based recording system for high mass-resolution ion-probe analysis
Author: Long, J. V. P., Astill, D. M., Coles, J. N., Reed, S. J. B.
Location: Ion Probe Unit, Natl. Environ. Res. Counc., Cambridge, Engl.
Section: CA079002 Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 132A-132C
Identifiers: computerized recording ion probe analysis, magnetic field control ion probe

CA088120830330
Descriptors: Mass spectrometers and spectrographs,secondary-ion, microprobe;Recording apparatus;Computer application
Identifiers: based system anal high resoln systems

CA088120826870
SIMS and electron microscopy study of the transition layer for silicon deposited on a sapphire substrate
Author: Trilhe, J., Blanchard, B., Borel, J.
Location: Lab. Electron. Technol. Inf., CEN, Grenoble, Fr.
Section: CA076013 Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 1, Pages: 541-4
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: silica sapphire transition layer

CA088120826870
Descriptors: Interface
Identifiers: properties sapphire electron microscopic study silicon
CAS Registry Numbers: 7440-21-3 1317-82-4

CA08814095201V
Study of oxygen-covered metal surfaces by SIMS, AES, and ESCA
Author: Benninghoven, A., Bispinck, H., Ganschow, O., Wiedmann, L.
Location: Phys. Inst., Univ. Muenster, Muenster, Ger.
Section: CA066003, CA067XXX Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 3, Pages: 2577-80
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: mass spectroscopy oxidn metal, Auger oxidn metal, ESCA oxidn metal, oxidized metal surface spectroscopy, oxygen covered metal surface spectroscopy

CA08814095201V
Descriptors: Metals,properties;Oxidation;Chemisorbed substances;Mass spectroscopy,secondary-ion
Identifiers: surface electron photoelectron oxygen covered surfaces
CAS Registry Numbers: 7782-44-7 7440-32-6 7439-98-7 7440-48-4

CA08814095196X
Simultaneous AES-SIMS measuring method
Author: Kaus, G., Kempf, J.
Location: IBM Ger., Sindelfingen, Ger.
Section: CA066003, CA073XXX, CA076XXX Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 3, Pages: 2277-80
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: Auger spectroscopy simultaneous mass spectroscopy, secondary ion mass spectroscopy Auger, surface analysis Auger mass spectroscopy

CA08814095196X
Descriptors: Electron emission spectroscopy,Auger;Mass spectroscopy,secondary-ion;Surface; Desorption,electron-stimulated;Electron beam,chemical and physical effects
Identifiers: simultaneous Auger anal ions study

CA08814095195W
Quantitative surface studies with x-ray photoelectron spectroscopy (XPS) and secondary ion mass spectroscopy (SIMS)
Author: Winograd, N., Shepard, A., Hewitt, R., Baitinger, W., Delgass, N.
Location: Sch. Chem. Eng., Purdue Univ., West Lafayette, Indiana
Section: CA066003, CA073XXX, CA076XXX Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 3, Pages: 2217-20
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: surface photoelectron mass spectroscopy, secondary ion mass spectroscopy surface, x ray photoelectron spectroscopy surface

CA08814095195W
Descriptors: Mass spectroscopy,secondary-ion;Photoelectron spectroscopy,x-ray;Surface
Identifiers: properties presence oxygen study indium
CAS Registry Numbers: 7440-74-6 7782-44-7

CA08812083156W
Analysis of solids using a quadrupole mass filter
Author: Fralick, R. D., Roden, H. J., Hinthorne, J. R.
Location: Appl. Res. Lab., Hasler Res. Cent., Goleta, Calif.
Section: CA079006 Publ Class: TECH REP
Journal: ASTM Spec. Tech. Publ. Coden: ASTTA8 Publ: 76 Issue: STP 596, Surf. Anal. Tech. Metall. Appl., Pages: 126-39 Meeting Date: 75
Identifiers: solid analysis quadrupole mass filter, secondary ion mass spectrometer solid, silicon analysis quadrupole mass filter, depth profiling quadrupole mass filter, isotope ratioing quadrupole mass filter

CA08812083156W
Descriptors: Mass spectrometers and spectrographs,secondary-ion;Mass spectroscopy,secondary-ion;Solids
Identifiers: quadrupole filter depth profiling isotope ratio measurements anal

CA08812083155V
Small area depth profiling with the ion microprobe
Author: Whatley, T. A., Comaford, D. J., Colby, John, Miller, Paul
Location: Probe Appl. Lab., Appl. Res. Lab., Sunland, Calif.
Section: CA079006 Publ Class: TECH REP
Journal: ASTM Spec. Tech. Publ. Coden: ASTTA8 Publ: 76 Issue: STP 596, Surf. Anal. Tech. Metall. Appl., Pages: 114-25 Meeting Date: 75
Identifiers: ion microprobe small area profiling, microanalysis ion microprobe, depth profiling ion microprobe

CA08812083155V
Descriptors: Mass spectroscopy,secondary-ion, microprobe
Identifiers: depth profiling small area samples

DIALOG File4: CA CONDENS/CASIA 77-VOL88(20) (Copr. Am. Chem. Soc.) (Item 30 of 140) User4930 18may78

CA088140981O8F
Quantitative SIMS - analysis on nonplanar surfaces
Author: Ruedenauer, F. G., Steiger, W.
Location: SGAE, Vienna, Austria
Section: CA076011, CA066XXX Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6
Publ: 77 Series: 3, Pages: 2535-8
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: surface analysis mass spectroscopy, secondary ion mass spectroscopy, quant surface analysis

CA088140981O8F
Descriptors: Mass spectroscopy,secondary-ion, quant.; Surface,nonplanar
Identifiers: surfaces anal spectrometry

CA088140981O7E
Tridimensionnal characterization of solid surfaces with SIMS analysis
Author: Diebold, A., Marguerite, J. L.
Location: Surf. Anal. Dep., Riber S. A., Rueil-Malmaison, Fr.
Section: CA076011 Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6
Publ: 77 Series: 3, Pages: 2523-5
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: review secondary ion mass spectrometry

CA088140981O7E R
Descriptors: Mass spectroscopy,secondary-ion;Surface
Identifiers: three dimensional characterization solid surfaces spectrometry

CA088140954427
Kinetic studies on single crystals of fluorides and oxides by SIMS and AES
Author: Buhl, R., Preisinger, A.
Location: Balzers A.-G. Hochvakuumtech. Duenne Schichten, Balzers, Liechtenstein
Section: CA067003, CA066XXX, CA075XXX Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6
Publ: 77 Series: 2, Pages: 1039-42
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: electron beam reaction fluoride oxide, surface fluoride oxide electron beam, fluoride surface reaction electron beam, oxide surface reaction electron beam, mass spectroscopy fluoride oxide electron, Auger fluoride oxide electron, color center fluoride oxide electron

CA088140954427
Descriptors: Kinetics,reaction;Fluorides,reactions;Oxides,reactions;Mass spectroscopy,secondary-ion;Electron emission spectroscopy,Auger;Electron beam,chemical and physical effects;Color centers
Identifiers: surface beams surfaces study formation
CAS Registry Numbers: 7783-40-6 7789-75-5 7631-86-9 471-34-1

CA088140952470
Recoil spectroscopy of oxygen on tungsten(100)
Author: Prigge, S., Niehus, H., Bauer, E.
Location: Phys. Inst., Tech. Univ. Clausthal, Clausthal-Zellerfeld, Ger.
Section: CA066003, CA076XXX Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6
Publ: 77 Series: 2, Pages: 1381-4
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: oxygen adsorbed tungsten recoil spectroscopy, mass spectroscopy ion recoil adsorbate

CA088140952470
Descriptors: Mass spectroscopy,secondary-ion;Adsorbed substances
Identifiers: properties tungsten recoil oxygen ions study surfaces
CAS Registry Numbers: 7782-44-7 7440-33-7 7782-44-7D

CA088140952O3X
A unique instrument for multiple technique surface characterization by ESCA, scanning Auger, UPS and SIMS
Author: Palmberg, P. W., Riggs, W. M.
Location: Phys. Electron. Ind., Inc., Eden Prairie, Minn.
Section: CA066003, CA073XXX, CA076XXX Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6
Publ: 77 Series: 3, Pages: 2617-20
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: Auger surface study app, photoelectron spectroscopy surface study app, mass spectroscopy surface study app, electron scanning microscopy surface, surface study combined spectroscopy

CA088140952O3X
Descriptors: Electron emission spectroscopy,Auger; Photoelectron spectroscopy,x-ray;Photoelectron spectroscopy,UV;Mass spectrometers and spectrographs,secondary-ion; Microscopes,electron scanning;Computer application;Surface
Identifiers: combined other techniques Auger multiple study

CA088151042l9M
Secondary ion mass spectrometry. A new analytical technique for biologically important compounds
Author: Benninghoven, A., Sichtermann, W.
Location: Phys. Inst., Univ. Muenster, Muenster, Ger.
Section: CA022002, CA034XXX, CA064XXX, CA080XXX Publ Class: JOURNAL
Journal: Org. Mass Spectrom. Coden: ORMSBG Publ: 77 Series: 12 Issue: 9 Pages: 595-7
Identifiers: analysis biol compd mass spectra, amino acid secondary ion mass spectra, vitamin secondary ion mass spectra, peptide secondary ion mass spectra, mass spectra secondary ion biol compd, pharmaceutical secondary ion mass spectra

CA088151042l9M
Descriptors: Amino acids,analysis;Pharmaceutical analysis; Peptides,analysis;Mass spectra,secondary-ion
Identifiers: properties spectrum esters compounds identification spectrometry biol important compds
CAS Registry Numbers: 56-40-6 56-41-7 107-95-9 63-91-2 56-45-1 72-19-5 147-85-3 72-18-4 61-90-5 327-57-1 74-79-3 60-18-4 73-22-3 52-90-4 56-89-3 63-68-3 13073-35-3 56-85-9 623-33-6 1115-59-9 52-89-1 107-35-7 556-50-3 556-33-2 869-19-2 721-90-4 57-44-3 299-42-3 51-55-8 51-43-4 50-81-7 58-85-5 59-67-6 98-92-0 121-57-3 63-74-1 144-80-9 50-89-5 86-40-8 57-00-1 60-27-5

CA088140985590
Sputtered secondary ion emission as chemical analysis technique
Author: Bayly, A. R., MacDonald, R. J.
Location: Fac. Sci., Australian Natl. Univ., Canberra, Aust.
Section: CA079000 Publ Class: CONF PROC
Journal: Summ. Proc. - Aust. Conf. Nucl. Tech. Anal. Coden: 37JAAZ Publ: 77 Pages: 49-50 Meeting Date: 76
Publisher: CSIRO Address: E. Melbourne, Aust
Identifiers: review sputtered secondary ion emission, secondary ion mass spectroscopy review

CA088140985590 R
Descriptors: Mass spectroscopy,secondary-ion
Identifiers: anal

CA088140985430
Micro-analysis by solid mass spectrometry: a review
Author: Konishi, Fumiya, Kusao, Kenji, Nakamura, Nobuo
Location: Cent. Res. Lab., Matsushita Electr. Ind. Co., Osaka, Japan
Section: CA079000, CA076XXX Publ Class: JOURNAL
Journal: Natl. Tech. Rep. (Matsushita Electr. Ind. Co., Osaka) Coden: NTROAV Publ: 77 Series: 23 Issue: 1 Pages: 4-13 Language: Japan
Identifiers: review solid analysis mass spectroscopy, spark source mass spectroscopy review, secondary ion mass spectroscopy review, metal analysis mass spectroscopy review, alloy analysis mass spectroscopy review

CA088140985430 R
Descriptors: Metals,analysis;Alloys,analysis;Mass spectroscopy,spark-source;Mass spectroscopy,secondary-ion
Identifiers: solids

CA088140981640
Fast diffusion of elevated-temperature ion-implanted selenium in gallium arsenide as measured by secondary ion mass spectrometry
Author: Lidow, A., Gibbons, J. F., Deline, V. R., Evans, C. A., Jr.
Location: Stanford Electron Lab., Stanford Univ., Stanford, Calif.
Section: CA076013, CA065XXX Publ Class: JOURNAL
Journal: Appl. Phys. Lett. Coden: APPLAB Publ: 78 Series: 32 Issue: 3 Pages: 149-51
Identifiers: selenium diffusion gallium arsenide

CA088140981640W
Descriptors: Diffusion
Identifiers: properties implanted gallium arsenide selenium implants
CAS Registry Numbers: 7782-49-2 1303-00-0

CA088140981090
A new UHV-specimen preparation chamber for solid surface analysis with sample transport mechanism over a UHV-sluice lock to a SIMS-apparatus
Author: Klaus, N., Higatsberger, M. J.
Location: I. Phys. Inst., Univ. Wien, Vienna, Austria
Section: CA076011, CA066XXX Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 3, Pages: 2597-600
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: surface analysis mass spectroscopy, secondary ion mass spectroscopy

CA088140981090
Descriptors: Mass spectroscopy,secondary-ion;Surface
Identifiers: sample prepn chamber anal spectrometry

CA088161140048
Application of SIMS analysis with reactive sputtering and conclusions to the mechanism of the secondary ionization
Author: Giber, J., Josepovits, V. K.
Location: Phys. Inst., Tech. Univ. Budapest, Budapest, Hung.
Section: CA076005 Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 3, Pages: 2585-8
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: secondary ionization mass spectroscopy, argon ionization mass spectroscopy, sputtering reactive mass spectroscopy, aluminum alloy secondary ionization, magnesium aluminum secondary ionization, silicon aluminum secondary ionization, copper aluminum secondary ionization, nickel aluminum secondary ionization, iron nickel secondary ionization

CA088161140048
Descriptors: Mass spectroscopy,secondary-ion;Sputtering,reactive;Ionization in gases
Identifiers: ions properties yield presence studies nonbase study
CAS Registry Numbers: 7782-44-7D 7440-37-1 11099-20-0 11099-22-2 11099-19-7 11114-68-4 11148-32-6

CA088161140022
Preferential sputtering on binary alloys by SIMS
Author: Arita, M., Someno, M.
Location: Dep. Metall. Eng., Tokyo Inst. Technol., Tokyo, Japan
Section: CA076005 Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 3, Pages: 2511-14
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: preferential sputtering binary alloy, deuterium sputtering vanadium niobium

CA088161140022
Descriptors: Sputtering;Alloys,binary,properties;Diffusion
Identifiers: vanadium niobium preferential deuterium secondary mass spectroscopy study theory
CAS Registry Numbers: 7782-39-0 7440-62-2 7440-03-1

CA088161111012S
The SIMS spectrum of the oxygen-tungsten (100) chemisorption system
Author: Yu, Ming L.
Location: Brookhaven Natl. Lab., Upton, N. Y.
Section: CA066003, CA076XXX Publ Class: JOURNAL
Journal: Surf. Sci. Coden: SUSCAS Publ: 78 Series: 71 Issue: 1 Pages: 121-38
Identifiers: secondary ion mass spectroscopy chemisorption, chemisorption oxygen tungsten SIMS

CA088161111012S
Descriptors: Mass spectroscopy,secondary-ion;Chemisorption
Identifiers: reactions tungsten study oxygen submonolayer range
CAS Registry Numbers: 7782-44-7 7440-33-7

CA088161109170
Comparison of thin film analytical methods
Author: Werner, H. W.
Location: Philips Res. Lab., Eindhoven, Neth.
Section: CA066000, CA075XXX, CA076XXX Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 3, Pages: 2135-44
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: review surface film electron spectroscopy, structure film electron spectroscopy review

CA088161109170 R
Descriptors: Surface structure;Surface structure;Electron emission spectroscopy,Auger;Photoelectron spectroscopy,x-ray;Ion beams;Mass spectroscopy,secondary-ion
Identifiers: detn films spectroscopic method methods film diffraction anal

CA088:61114727Q
Quantitative surface analysis using ion-induced secondary ion and photon emission
Author: MacDonald, R. J., Martin, P. J.
Location: Dep. Phys., Aust. Natl. Univ., Canberra, Aust.
Section: CA079006 Publ Class: JOURNAL
Journal: Surf. Sci. Coden: SUSCAS Publ: 77 Series: 66 Issue: 2 Pages: 423-35
Identifiers: surface analysis ion beam technique, secondary ion emission surface analysis, photon emission surface analysis, steel surface analysis ion microprobe, stainless steel surface analysis, chromium iron detn steel surface

CA088161147270
Descriptors: Mass spectroscopy,secondary-ion, microprobe; Surface;Ion beams,microprobes
Identifiers: analysis detn stainless steel chromium iron anal surfaces induced photon emission
CAS Registry Numbers: 7440-47-3 7439-89-6 12597-68-1

CA08816114722J
SIMS Determination of small diffusion coefficients in oxidic compounds
Author: Sockel, H. G., Hallwig, D.
Location: Inst. Werkstoffwiss., Univ. Erlangen-Nuernberg, Erlangen, Ger.
Section: CA079006 Publ Class: JOURNAL
Journal: Mikrochim. Acta, Suppl. Coden: MKASAK Publ: 77 Series: 7, Pages: 95-107 Language: Ger
Identifiers: mass spectroscopy diffusion coeff detn, oxygen 18 profile detn oxide, magnesium 26 profile detn forsterite, zinc oxide analysis oxygen 18, forsterite analysis magnesium

CA09916114722J
Descriptors: Diffusion,coeff.;Mass spectroscopy,secondary ion
Identifiers: analysis detn concn profile forsterite zinc oxide beam sputtering oxygen 18 magnesium 26 coeffs oxidic compds enery dispersive x ray anal
CAS Registry Numbers: 14797-71-8 13981-68-5 1314-13-2 15118-03-3

CA08816114610W
Simultaneous in-situ application of surface analytical techniques
Author: Komiya, Souji, Narusawa, Tadashi
Location: Ulvac Corp., Chigasaki, Japan
Section: CA079000 Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 3, Pages: 2603-12
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P

Identifiers: review surface analysis, Auger spectroscopy surface analysis review, mass spectroscopy surface analysis review, simultaneous technique surface analysis review

CA08816114610W R
Descriptors: Surface;Electron emission spectroscopy,Auger; Mass spectroscopy,secondary ion
Identifiers: anal simultaneous situ techniques combined Auger

CA08816114152Y
Combined UHV ion-scattering and secondary-ion mass spectrometer using magnetic analysis
Author: Tongson, Luis L., Cooper, C. Burleigh
Location: Phys. Dep., Univ. Delaware, Newark, Del.
Section: CA076011, CA075XXX Publ Class: JOURNAL
Journal: J. Phys. E Coden: JPSIAE Publ: 77 Series: 10 Issue: 12 Pages: 1245-8
Identifiers: mass spectrometer ion bombardment, secondary ion mass spectrometer

CA08816114152Y
Descriptors: Mass spectrometers and spectrographs,secondary--ion;Ion beams
Identifiers: bombardment studies combined scattering sputtered sputtering solids bombarded spectrometry

CA09818129762W
Rapid data acquisition using an automated SIMS quadrupole mass analyzer for solids: application to high resolution depth profiling
Author: Conrad, R. L., Whatley, T. A., Fralick, R. D.
Location: Appl. Res. Lab., Sunland, Calif.
Section: CA076011, CA079XXX Publ Class: JOURNAL
Journal: Proc., Annu. Conf. - Microbeam Anal. Soc. Coden: PCSCD8 Publ: 77 Series: 12 Issue: Int. Conf. X-Ray Opt. Microanal., 8th Annu. Conf. Microbeam Anal. Soc. Pages: 134A-134E
Identifiers: secondary ion mass spectrometry, quadrupole mass analyzer, depth profiling mass spectrometry, film depth profiling mass spectrometry

CA08818129762W
Descriptors: Mass spectroscopy,secondary-ion quadrupole mass anal.;Films
Identifiers: high resoln depth profiling analyzer

CA08818126734C
The adsorption of carbon monoxide on molybdenum studies by low energy SIMS and EID
Author: Dawson, P. H.
Location: Div. Phys., Natl. Res. Counc., Ottawa, Ont.
Section: CA066003 Publ Class: JOURNAL
Journal: Surf. Sci. Coden: SUSCAS Publ: 78 Series: 71 Issue: 2 Pages: 247-66
Identifiers: adsorption carbon monoxide molybdenum, desorption carbon monoxide molybdenum, mass spectroscopy carbon monoxide molybdenum

CA08818126734C
Descriptors: Adsorption;Desorption,electron-stimulated;Electron beam,chemical and physical effects
Identifiers: properties molybdenum secondary mass spectroscopy study carbon monoxide
CAS Registry Numbers: 630-08-0 7439-98-7

CA08818126729E
Isotope effect in the study of hydrogen-tungsten(100) and oxygen-tungsten(100) chemisorption systems using SIMS
Author: Yu, M. L.
Location: Brookhaven Natl. Lab., Upton, N. Y.
Section: CA066003, CA076XXX Publ Class: TECH REP
Journal: Report Coden: D3REP3 Publ: 77 Issue: BNL-22947, Pages: 11 pp.
Citation: Energy Res. Abstr. 1977, 2(24), Abstr. No. 61192
Avail: NTIS
Identifiers: isotope chemisorption hydrogen oxygen tungsten, hydrogen isotope effect chemisorption tungsten, oxygen isotope effect chemisorption tungsten, mass spectroscopy chemisorption hydrogen oxygen

CA08818126729E
Descriptors: Isotope effect;Chemisorption;Mass spectroscopy-,secondary-ion
Identifiers: reactions tungsten study hydrogen oxygen
CAS Registry Numbers: 1333-74-0 7782-44-7 7440-33-7 7782-39-0 14797-71-8

CA08816114750S
The use of nuclear reactions and SIMS for quantitative depth profiling of hydrogen in amorphous silicon
Author: Clark, G. J., White, C. W., Allred, D. D., Appleton, B. R., Magee, C. W., Carlson, D. E.
Location: Solid State Div., Oak Ridge Natl. Lab., Oak Ridge, Tenn.
Section: CA079006 Publ Class: JOURNAL
Journal: Appl. Phys. Lett. Coden: APPLAB Publ: 77 Series: 31 Issue: 9 Pages: 582-5
Identifiers: hydrogen profile detn silicon, amorphous silicon analysis hydrogen, radiochem hydrogen profile detn silicon, secondary ion mass spectroscopy hydrogen, mass spectroscopy hydrogen detn silicon

CA08816114750S
Identifiers: analysis detn depth profile amorphous silicon nuclear reactions secondary ion mass spectroscopy hydrogen
CAS Registry Numbers: 1333-74-0 7440-21-3

CA08816114745U
Determination of rare-earth oxides using an ion microanalyzer
Author: Uwamino, Yoshinori, Ishizuka, Toshio, Nakajima, Kunio, Sunahara, Hiroshi
Location: Gov. Ind. Res. Inst., Nagoya, Japan
Section: CA079006 Publ Class: JOURNAL
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 77 Series: 25 Issue: 2 Pages: 153-9 Language: Japan
Identifiers: lanthanide oxide detn ion microprobe, mass spectroscopy lanthanide oxide detn, yttrium oxide detn ion microprobe, lanthanum oxide detn ion microprobe, cerium oxide detn ion microprobe, praseodymium oxide detn ion microprobe, neodymium oxide detn ion microprobe, samarium oxide detn ion microprobe

CA08816114745U
Descriptors: Rare earth oxides;Mass spectroscopy,secondary ion, microprobe
Identifiers: analysis detn
CAS Registry Numbers: 1314-36-9 1312-81-8 1306-38-3 12037-29-5 1313-97-9 12060-58-1

CA088201432405
Detection of fission-product deposition and diffusion using secondary ion mass spectroscopy (SIMS)
Author: Beske, H. E., Holzbrecher, H.
Location: Zentralabt. Chem. Anal., KFA, Juelich, Juelich, Ger.
Section: CA071009 Publ Class: JOURNAL
Journal: Mikrochim. Acta Coden: MIACAQ Publ: 78 Series: 1 Issue: 1-2 Pages: 201-8 Language: Ger
Identifiers: fission product deposition diffusion, reactor wall material cesium diffusion, ion mass spectroscopy cesium diffusion

CA088201432405
Descriptors: Nuclear reactors;Diffusion
Identifiers: properties distribution fission product wall material secondary mass spectroscopy detection base cesium materials products grain boundaries alloying
CAS Registry Numbers: 7440-46-2 11135-86-7 66121-30-0

CA088201420640
Isotope effect in the study of hydrogen-tungsten (100) and oxygen-tungsten (100) chemisorption systems using SIMS
Author: Yu, Ming L.
Location: Brookhaven Natl. Lab., Upton, N. Y.
Section: CA066003, CA076XXX Publ Class: JOURNAL
Journal: Nucl. Instrum. Methods Coden: NUIMAL Publ: 78 Series: 149 Issue: 1-3 Pages: 559-61
Identifiers: isotope effect chemisorbate mass spectroscopy, secondary ion mass spectroscopy chemisorbate, tungsten chemisorbate mass spectroscopy, oxygen isotope chemisorbed tungsten, hydrogen isotope chemisorbed tungsten

CA088201420640
Descriptors: Isotope effect;Chemisorbed substances;Mass spectroscopy,secondary-ion;Sputtering
Identifiers: properties tungsten study hydrogen oxygen uses miscellaneous use neon ions
CAS Registry Numbers: 1333-74-0 7782-44-7 7440-33-7 7782-39-0 14797-71-8 14782-23-1

CA088201403087
Chemistry of metal and alloy adherends by secondary ion mass spectroscopy, ion scattering spectroscopy, and Auger electron spectroscopy
Author: Baun, W. L., McDevitt, N. T., Solomon, J. S.
Location: Air Force Mater. Lab., Wright-Patterson AFB, Ohio
Section: CA056000, CA066XXX Publ Class: TECH REP
Journal: ASTM Spec. Tech. Publ. Coden: ASTTA8 Publ: 76 Issue: STP 596, Surf. Anal. Tech. Metall. Appl., Pages: 86-100 Meeting Date: 75
Identifiers: review surface analysis adhesive bonding, metal bonding surface analysis review, alloy bonding surface analysis review

CA088201403087 R
Descriptors: Surface,anal.;Adhesives;Metals,analysis;Alloys-,uses and miscellaneous
Identifiers: bonding relation

CA088181303897
A comparative study of solid surface analyses between low energy ion scattering spectroscopy (ISS) and secondary ion mass spectroscopy (SIMS)
Author: Taya, Shunroku, Tsuyama, Hitoshi, Itoh, Michiyasu, Kanomata, Ichiro
Location: Cent. Res. Lab., Hitachi Ltd., Tokyo, Japan
Section: CA079006, CA076XXX Publ Class: JOURNAL
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 77 Series: 25 Issue: 3 Pages: 251-62
Identifiers: aluminum surface analysis, copper gold silver alloy analysis, gallium prosphide surface analysis, secondary ion mass spectroscopy surface, ion beam scattering surface analysis, surface ion scattering mass spectroscopy, microprobe ion surface analysis

CA088181303897
Descriptors: Ion beams;Surface;Mass spectrometers and spectrographs,double-focusing, stigmatic;Mass spectroscopy,secondary-ion
Identifiers: analysis anal low energy scattering spectrometry base detn silicon wafer boron
CAS Registry Numbers: 7429-90-5 37197-03-8 12063-98-8 7440-42-8 7440-21-3

CA088181297678
Contamination, collection geometry and collection field effects on secondary ion energy spectra
Author: Snowdon, K. J.
Location: Dep. Phys., Australian Natl. Univ., Canberra, Aust.
Section: CA076011 Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 3, Pages: 2557-60
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: titanium secondary ion emission

CA088181297678
Descriptors: Ions in gases;Mass spectra,secondary-ion
Identifiers: properties emission surfaces titanium
CAS Registry Numbers: 7440-32-6

Print 9/5/1-140
DIALOG File4: CA CONDENS/CASIA 77-VOL88(20) (Copr. Am. Chem. Soc.) (Item 1 of 140) User493D 18may78

CA088201455879
Secondary ion mass spectrometry of deuterium in titanium, zirconium, vanadium, niobium, and tantalum
Author: Someno, M., Kobayashi, M., Saito, H.
Location: Dep. Metall., Tokyo Inst. Technol., Tokyo, Japan
Section: CA079006 Publ Class: CONF PROC
Journal: Proc. Int. Vac. Congr., 7th Coden: 37JNA6 Publ: 77 Series: 3, Pages: 2593-6
Publisher: R. Dobrozemsky Address: Vienna, Austria
Avail: Dobrozemsky, R.; Ruedenauer, F.; Viehboeck, F. P
Identifiers: deuterium detn mass spectroscopy, secondary ion mass spectroscopy deuterium, titanium analysis deuterium, zirconium analysis deuterium, vanadium analysis deuterium, niobium analysis deuterium, tantalum analysis deuterium, alloy analysis deuterium, iron titanium alloy analysis deuterium, aluminum titanium alloy analysis deuterium

CA088201455879
Identifiers: analysis detn secondary ion mass spectrometry deuterium base
CAS Registry Numbers: 7782-39-0 7440-32-6 7440-67-7 7440-62-2 7440-03-1 7440-25-7 66118-85-2 66118-86-3

CA088201454849
Ion microprobe using a field evaporation ion source fed by liquid gallium
Author: Ringo, G. R., Krohn, V. E.
Location: USA
Section: CA079002 Publ Class: TECH REP
Journal: Report Coden: D3REP3 Publ: 77 Issue: CONF-770642-12, Pages: 8 pp.
Citation: Energy Res. Abstr. 1978, 3(1), Abstr. No. 1343
Avail: NTIS
Identifiers: ion microprobe field evapn source, gallium field evapn ion source

CA088201454849
Descriptors: Ion sources,field-evapn.;Mass spectrometers and spectrographs,secondary-ion, microprobe
Identifiers: uses miscellaneous iron anal liq gallium fed high resoln scanning efficiency collection neg ions
CAS Registry Numbers: 7440-55-3

CA088201450980
Interface studies of metal-semiconductor contacts by means of SIMS, nuclear reaction and RBS
Author: Ponpon, J. P., Grob, J. J., Grob, A., Stuck, R., Siffert, P.
Location: Groupe Phys. Appl. Semiconducteurs, Cent. Rech. Nucl., Strasbourg, Fr.
Section: CA076013 Publ Class: JOURNAL
Journal: Nucl. Instrum. Methods Coden: NUIMAL Publ: 78 Series: 149 Issue: 1-3 Pages: 647-51
Identifiers: oxygen accumulation gold silicon interface

CA088201450980
Descriptors: Interface
Identifiers: properties accumulation gold silicon interfaces oxygen
CAS Registry Numbers: 7782-44-7 7440-57-5 7440-21-3

CA088201448899
Energy analyzed secondary ion mass spectroscopy and simultaneous Auger and XPS measurements of ion bombarded surfaces
Author: Krauss, A. R., Gruen, D. M.
Location: Chem. Div., Argonne Natl. Lab., Argonne, Ill.
Section: CA076004 Publ Class: JOURNAL
Journal: Nucl. Instrum. Methods Coden: NUIMAL Publ: 78 Series: 149 Issue: 1-3 Pages: 547-52
Identifiers: secondary ion sputtering, kinetic energy sputtered ion, emission secondary ion sputtering, potassium secondary ion sputtering, aluminum secondary ion sputtering, titanium secondary ion sputtering, argon sputtering metal, surface oxygen metal sputtering

CA088201444618
Hydrogen ion implantation profiles as determined by SIMS
Author: Magee, Charles W., Wu, Chung P.
Location: RCA Lab., Princeton, N. J.
Section: CA075002, CA065XXX, CA076XXX Publ Class: JOURNAL
Journal: Nucl. Instrum. Methods Coden: NUIMAL Publ: 78 Series: 149 Issue: 1-3 Pages: 529-33
Identifiers: mass spectrometry hydrogen implantation, silicon implantation hydrogen, stopping power hydrogen silicon

CA088201444618
Descriptors: Mass spectroscopy,secondary, ion
Identifiers: properties implantation profile silicon detn hydrogen
CAS Registry Numbers: 1333-74-0 7440-21-3

CA089040036043T
Quantitative analysis of oxygen in thin epitaxial layers of gallium arsenide by SIMS
Author: Huber, A. M., Morillot, G., Linh, N. T., Debrun, J. L., Valladon, M.
Location: Lab. Cent. Rech., Thomson CSF, Orsay, Fr.
Section: CA079006 Publ Class: JOURNAL
Journal: Nucl. Instrum. Methods Coden: NUIMAL Publ: 78
Series: 149 Issue: 1-3 Pages: 543-6
Identifiers: oxygen detn epitaxial gallium arsenide, secondary ion mass spectrometry oxygen, epitaxial gallium arsenide analysis oxygen

CA089040036043T
Identifiers: analysis oxygen detn epitaxial secondary ion mass spectroscopy gallium arsenide
CAS Registry Numbers: 1303-00-0 7782-44-7

CA089020155536R
Secondary ion mass spectrometry of rare earth elements
Author: Ishizuka, Toshio, Uwamino, Yoshinori, Nakajima, Kunio, Sunahara, Hiroshi
Location: Gov. Ind. Res. Inst., Nagoya, Japan
Section: CA076011 Publ Class: JOURNAL
Journal: Nagoya Kogyo Gijutsu Shikensho Hokoku Coden: NKGSAR Publ: 78 Series: 25 Issue: 10 Pages: 311-18
Language: Japan
Identifiers: secondary ion mass spectrometry, mass spectrometry rare earth metal, rare earth compd metal spectrometry

CA089020155536R
Descriptors: Mass spectra;Mass spectroscopy,secondary-ion; Rare earth metals,compounds;Rare earth metals,properties
Identifiers: compds elements spectrometry

CA088262018027R
Study of contamination of copper surfaces with abrasive materials by low energy secondary ion mass spectrometry
Author: Suwa, Yoshiki, Kikuchi, Tadashi, Furuya, Keiichi
Location: Fac. Sci., Sci. Univ. Tokyo, Tokyo, Japan
Section: CA076011, CA068XXX Publ Class: JOURNAL
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 77 Series: 25 Issue: 4 Pages: 371-8 Language: Japan
Identifiers: mass spectrometry copper surface, abrasive polishing copper surface

CA088262018027R
Descriptors: Mass spectroscopy,secondary-ion, low-energy; Polishing,abrasive
Identifiers: properties surfaces spectroscopic study studies copper

CAS Registry Numbers: 7440-50-8

CA088261982410N
X-ray photoelectron spectroscopy and secondary ion mass spectrometry: a multitechnique approach to surface analysis
Author: Shepard, A., Hewitt, R. W., Baitinger, W. E., Slusser, G. J., Winograd, Nicholas, Ott, G. L., Dolgass, W. N.
Location: Sch. Chem. Eng., Purdue Univ., West Lafayette, Indiana
Section: CA066003, CA079XXX Publ Class: TECH REP
Journal: ASTM Spec. Tech. Publ. Coden: ASTTA8 Publ: 78
Issue: 643, Quant. Surf. Anal. Mater., Pages: 187-203
Meeting Date: 77
Identifiers: surface analysis photoelectron mass spectroscopy

CA088261982410N
Descriptors: Surface;Mass spectroscopy,secondary-ion; Photoelectron spectroscopy,x-ray;Catalysts and Catalysis
Identifiers: properties study uses miscellaneous ruthenium iron oxygen exposed indium spectroscopic anal combined
CAS Registry Numbers: 7440-22-4 7439-89-6 7440-18-8 7440-74-6 7782-44-7

CA088241809890C
Solid solubility of selenium in gallium arsenide as measured by secondary ion mass spectrometry
Author: Lidow, A., Gibbons, J. F., Deline, V. R., Evans, C. A., Jr.
Location: Stanford Electron. Lab., Stanford Univ., Stanford, Calif.
Section: CA076002, CA068XXX Publ Class: JOURNAL
Journal: Appl. Phys. Lett. Coden: APPLAB Publ: 78 Series: 32 Issue: 9 Pages: 572-3
Identifiers: selenium soly gallium arsenide, carrier concn selenium gallium arsenide, cond selenium doped gallium arsenide

CA088241809890C
Descriptors: Electric conductivity and conduction;Electric conductivity and conduction
Identifiers: properties gallium arsenide contg sol limits relation selenium limit soly
CAS Registry Numbers: 1303-00-0 7782-49-2

DIALOG File4: CA SEARCH 77-78/VOL 90(02) (Copr. Am. Chem. Soc.) (Item 29 of 55) User4930 18jan79

CA089080658310
Secondary ion mass spectrometry of surfaces at low energies
Author: Dawson, P. H.
Location: Div. Phys., Natl. Res. Counc. Canada, Ottawa, Ont.
Section: CA066003, CA076XXX Publ Class: JOURNAL
Journal: Adv. Mass Spectrom. Coden: AMSPAH Publ: 78 Series: 7A, Pages: 789-96
Identifiers: SIMS low energy surface adsorption, mass spectroscopy secondary ion surface, spectrometer secondary ion quadrupole filter, high sensitivity SIMS spectrometer, oxygen adsorption metal SIMS, copper adsorption oxygen SIMS, aluminum adsorption oxygen SIMS, titanium adsorption oxygen SIMS, carbon dioxide adsorption magnesium aluminum

CA089080658310
Descriptors: Adsorption;Mass spectrometers and spectrographs,secondary-ion;Mass spectroscopy,secondary-ion;Surface structure
Identifiers: properties aluminum magnesium alloy study oxygen metals nonbase carbon dioxide spectrometry studies low energies surfaces relation
CAS Registry Numbers: 124-38-9 7429-90-5 7440-32-6 7440-50-8 7782-44-7 37263-88-0

CA089060526450
A comparison of Auger electron spectroscopy (AES) and secondary ion mass spectrometry (SIMS)
Author: Morabito, J. M.
Location: Bell Teleph. Lab., Inc., Allentown, Pa.
Section: CA079000, CA076XXX Publ Class: TECH REP
Journal: Natl. Sci. Found., Res. Appl. Natl. Needs, (Rep.) NSF/RA (U. S.) Coden: XNRNBT Publ: 75 Issue: NSF/RA-N-75-289, Cadmium Sulfide Sol. Cells Other Heterojunctions; PB-252 297, Pages: 366-427
Identifiers: review Auger electron spectroscopy analysis, secondary ion mass spectrometry review, spectral analysis mass Auger review

CA089060526450 R
Descriptors: Electron emission spectroscopy,Auger;Mass spectroscopy,secondary-ion
Identifiers: anal compared Auger

CA089050389550
Detection, identification, and structural investigation of biologically important compounds by secondary ion mass spectrometry
Author: Benninghoven, Alfred, Sichtermann, W. K.
Location: Phys. Inst., Univ. Muenster, Muenster, Ger.
Section: CA009004, CA001XXX, CA005XXX, CA004XXX Publ Class: JOURNAL
Journal: Anal. Chem. Coden: ANCHAM Publ: 78 Series: 50 Issue: 8 Pages: 1180-4
Identifiers: mass spectroscopy secondary ion biol, amino acid mass spectroscopy, peptide mass spectroscopy, pharmaceutical mass spectroscopy, vitamin mass spectroscopy, sufonamide mass spectroscopy

CA089050389550
Descriptors: Amino acids,properties;Mass spectra,secondary-ion;Mass spectroscopy,secondary-ion;Peptides,properties;Pharmaceuticals;Sulfonamides;Vitamins
Identifiers: spectrum compounds esters biol compds
CAS Registry Numbers: 50-81-7 50-89-5 51-43-4 51-55-8 52-89-1 52-90-4 56-40-6 56-41-7 56-45-1 56-85-9 56-89-3 57-00-1 57-44-3 58-85-5 59-67-6 60-18-4 60-27-5 61-90-5 63-68-3 63-74-1 63-91-2 72-18-4 72-19-5 73-22-3 74-79-3 98-92-0 107-35-7 107-95-9 121-57-3 144-80-9 147-85-3 299-42-3 327-57-1 556-33-2 556-50-3 623-33-6 721-90-4 869-19-2 1115-59-9 13073-35-3 65589-70-0

CA089040360860
Secondary ion mass spectrometric studies of group III - group V semiconducting materials
Author: Scilla, Gerald Joseph
Location: Cornell Univ., Ithaca, N. Y.
Section: CA079006 Publ Class: DISS
Coden: DABBBA Publ: 77 Pages: 172 pp.
Citation: Diss. Abstr. Int. B 1978, 38(11), 5322
Avail: Univ. Microfilms Int., Order No. 78063:8
Identifiers: semiconductor material analysis mass spectrometry, Group III V semiconductor analysis, secondary ion mass spectrometry, ion microprobe mass spectrometry

CA089040360860
Descriptors: Group IIIA element pnictides;Mass spectroscopy,secondary-ion;Semiconductor materials
Identifiers: anal Group III V

DIALOG File4: CA SEARCH 77-78/VOL 90(02) (Copr. Am. Chem. Soc.) (Item 24 of 55) User4930 18jan79

CA089080703770
X-ray microanalysis and secondary ion mass spectrometry on thin films of different thicknesses. Combined quantitative utilization
Author: Bresse, J. F., Manifacier, J. C.
Location: Cent. Etud. Electron., Univ. Sci. Tech. Languedoc, Montpellier, Fr.
Section: CA079006 Publ Class: JOURNAL
Journal: Vide Coden: VIDEAA Publ: 78 Series: 189 Issue: Suppl. Pages: 73-9 Language: Fr
Identifiers: thin film analysis, secondary ion mass spectroscopy film, mass spectroscopy film analysis, electron microprobe film analysis, x ray analysis film

CA089080703770
Descriptors: Electron microprobe analysis;Films;Mass spectroscopy,secondary-ion
Identifiers: thin

CA089080703230
Secondary ion mass spectrometry and Auger electron spectroscopy semiquantitative analysis of metal alloys
Author: Davis, L. E., Gerlach, R. L.
Location: Anal. Lab., Phys. Electron. Ind., Inc., Eden Prairie, Minn.
Section: CA079006 Publ Class: TECH REP
Journal: ASTM Spec. Tech. Publ. Coden: ASTTA8 Publ: 78 Issue: 643, Quant. Surf. Anal. Mater., Pages: 182-6 Meeting Date: 77
Identifiers: alloy analysis Auger mass spectroscopy, Auger spectroscopy alloy analysis, mass spectroscopy alloy analysis, secondary ion mass spectroscopy alloy

CA089080703230
Descriptors: Alloys,analysis;Electron emission spectroscopy-,Auger;Mass spectroscopy,secondary-ion
Identifiers: Auger semiquant

CA089080703215
Quantitative analysis by secondary ion mass spectrometry
Author: Newbury, D. E.
Location: Inst. Mater. Res., Natl. Bur. Stand., Washington, D. C.
Section: CA079006 Publ Class: TECH REP
Journal: ASTM Spec. Tech. Publ. Coden: ASTTA8 Publ: 78 Issue: 643, Quant. Surf. Anal. Mater., Pages: 127-49 Meeting Date: 77
Identifiers: secondary ion mass spectroscopy analysis, quant analysis mass spectroscopy, multichannel analysis mass spectroscopy, glass analysis mass spectroscopy, local thermal equil mass spectroscopy, sensitivity factor mass spectroscopy

CA089080703215
Descriptors: Mass spectroscopy,secondary-ion
Identifiers: quant multielement anal comparison accuracy local thermal equil model sensitivity factors

CA089080702140
Quantitative analysis of phosphorus and arsenic in silicon by ion microanalyzer
Author: Tsuyama, Hitoshi, Hashimoto, Norikazu
Location: Hitachi Cent. Res. Lab., Kokubunji, Japan
Section: CA079006 Publ Class: JOURNAL
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 77 Series: 25 Issue: 4 Pages: 351-62 Language: Japan
Identifiers: arsenic detn ion microanalyzer, phosphorus detn ion microanalyzer, ion microanalyzer arsenic phosphorus detn, silicon analysis arsenic phosphorus, phosphosilicate glass analysis phosphorus, secondary ion mass spectrometry

CA089080702140
Descriptors: Glass,oxide
Identifiers: analysis arsenic phosphorus detn ion microprobe silicon phosphosilicate
CAS Registry Numbers: 7440-21-3 7440-38-2 7723-14-0

CA089080692610
Possibility of using the secondary ion mass spectrometry method to study super-thin silica layers
Author: Didenko, P. I., Marchenko, R. I., Romanova, G. F.
Location: USSR
Section: CA076003 Publ Class: CONF PROC
Journal: Poluprovodn. Plenki Sloistye Strukt. Coden: 38GEA5 Publ: 77 Pages: 62-6 Language: Russ
Publisher: "Naukova Dumka" Address: Kiev, USSR
Avail: Svechnikov, S. V
Identifiers: silica film mass spectrometry

CA089080692610
Descriptors: Mass spectroscopy,secondary-ion
Identifiers: uses miscellaneous films study superthin silica layers
CAS Registry Numbers: 7631-86-9

DIALOG File4: CA SEARCH 77-78/VOL 90(02) (Copr. Am. Chem. Soc.) (Item 19 of 55) User4930 18jan79

CA089120991S9F
Semiquantitative analyses by secondary ion mass spectrometry using one fitting parameter
Author: Morgan, A. E., Werner, H. W.
Location: Philips Res. Lab., Eindhoven, Neth.
Section: CA079006 Publ Class: JOURNAL
Journal: Mikrochim. Acta Coden: MIACAQ Publ: 78 Series: 2 Issue: 1-2 Pages: 31-50
Identifiers: single fitting parameter mass spectrometry, correction secondary ion mass spectrometry, metal analysis mass spectrometry correction, mineral analysis mass spectrometry correction

CA089120991S9F
Descriptors: Mass spectroscopy,secondary-ion;Metals,analysis ;Minerals
Identifiers: detn single fitting parameter correction paramater
CAS Registry Numbers: 7429-90-5 7439-89-6 7439-92-1 7439-95-4 7439-96-5 7439-98-7 7440-02-0 7440-03-1 7440-09-7 7440-16-6 7440-21-3 7440-22-4 7440-23-5 7440-24-6 7440-25-7 7440-31-5 7440-32-6 7440-33-7 7440-36-0 7440-38-2 7440-39-3 7440-42-8 7440-44-0 7440-47-3 7440-48-4 7440-50-8 7440-62-2 7440-67-7 7440-69-9 7440-70-2 7723-14-0

CA089120985S1A
Depth profiling of sodium in silicon dioxide films by secondary ion mass spectrometry
Author: Magee, Charles W., Harrington, William L.
Location: RCA Lab., Princeton, N. J.
Section: CA076011, CA079XXX Publ Class: JOURNAL
Journal: Appl. Phys. Lett. Coden: APPLAB Publ: 78 Series: 33 Issue: 2 Pages: 193-6
Identifiers: sodium implant profile silica, mass spectrometry sodium silica

CA089120985S1A
Identifiers: properties depth profile silica films implanted profiling ion sodium secondary mass spectroscopy
CAS Registry Numbers: 7440-23-5 7631-86-9

CA089120969O1F
A study of conversion coating development on aluminum in chromate/fluoride solutions using secondary ion mass spectrometry
Author: Abd Rabbo, M. F., Richardson, J. A., Wood, G. C.
Location: Corros. Prot. Cent., Univ. Manchester Inst. Sci. Technol., Manchester, Engl.
Section: CA072001 Publ Class: JOURNAL
Journal: Corros. Sci. Coden: CRRSAA Publ: 78 Series: 18 Issue: 2 Pages: 117-23
Identifiers: aluminum conversion coating, mass spectrometry aluminum coating

CA089120969O1F
Descriptors: Coating process,conversion;Mass spectroscopy,secondary-ion
Identifiers: uses miscellaneous chromate fluoride solns spectrometry study aluminum contg spectrometric development studies
CAS Registry Numbers: 7429-90-5 11104-59-9 16984-48-8

CA089100833S4E
Progress in secondary ion mass spectrometry instrumentation
Author: Liebl, H.
Location: Max-Planck-Inst. Plasmaphys., EURATOM, Garching, Ger.
Section: CA076000 Publ Class: JOURNAL
Journal: Adv. Mass Spectrom. Coden: AMSPAH Publ: 78 Series: 7A, Pages: 807-14
Identifiers: review secondary ion mass spectrometer

CA089100833S4E R
Descriptors: Mass spectrometers and spectrographs,secondary--ion

CA089100808O0M
Characterization of metal surfaces by secondary ion mass spectrometry x-ray photoelectron spectroscopy
Author: Hewitt, R. W., Shepard, A. T., Baitinger, W. E., Winograd, Nicholas, Ott, G. L., Delgass, W. N.
Location: Dep. Chem., Purdue Univ., West Lafayette, Indiana
Section: CA067003, CA066XXX, CA073XXX, CA076XXX Publ Class: JOURNAL
Journal: Anal. Chem. Coden: ANCHAM Publ: 78 Series: 50 Issue: 9 Pages: 1286-90
Identifiers: XPS mass spectra surface reaction, oxidn lead indium surface

CA089100808O0M
Descriptors: Mass spectroscopy,secondary-ion;Oxidation; Photoelectron spectroscopy,x-ray
Identifiers: oxidn properties seconary formation argon bombardment metal surfaces emission surface reaction product XPS lead indium oxygen metals study
CAS Registry Numbers: 7439-92-1P 7440-22-4 7440-37-1 7440-74-6

DIALOG File4: CA SEARCH 77-78/VOL 90(02) (Copr. Am. Chem. Soc.) (Item 14 of 55) User4930 18jan79

CA089141216411F
Secondary ion mass spectrometry of metals and alloys
Author: Cherepin, V. T.
Location: Inst. Met. Phys., Kiev, USSR
Section: CA076011 Publ Class: JOURNAL
Journal: Adv. Mass Spectrom. Coden: AMSPAH Publ: 78 Series: 7A, Pages: 776-83
Identifiers: secondary ion mass spectrometry, metal secondary ion mass spectrometry, alloy secondary ion mass spectrometry

CA089141216411F
Descriptors: Alloys,properties;Mass spectroscopy,secondary--ion;Metals,properties
Identifiers: nonbase
CAS Registry Numbers: 7429-90-5 7429-91-6 7439-89-6 7439-91-0 7439-92-1 7439-94-3 7439-95-4 7439-96-5 7439-98-7 7440-00-8 7440-02-0 7440-03-1 7440-05-3 7440-06-4 7440-10-0 7440-15-5 7440-16-6 7440-18-8 7440-19-9 7440-20-2 7440-22-4 7440-25-7 7440-27-9 7440-30-4 7440-31-5 7440-32-6 7440-33-7 7440-41-7 7440-43-9 7440-45-1 7440-47-3 7440-48-4 7440-50-8 7440-52-0 7440-54-2 7440-57-5 7440-58-6 7440-60-0 7440-62-2 7440-64-4 7440-66-6 7440-67-7 7440-69-9 7440-74-6 11122-73-9 11147-86-7 39431-49-7 67541-14-4

CA089141214091M
Introduction to secondary ion mass spectrometry (SIMS)
Author: Werner, H. W.
Location: Philips Res. lab., Eindhoven, Neth.
Section: CA076000 Publ Class: JOURNAL
Journal: NATO Adv. Study Inst. Ser., Ser. B Coden: NASBD3 Publ: 78 Series: B32 Issue: Electron Ion Spectrosc. Solids Pages: 324-441 Meeting Date: 77
Identifiers: review secondary ion mass spectrometry

CA089141214091M R
Descriptors: Mass spectroscopy,secondary-ion

CA089141213938
In-depth profiling by means of secondary ion mass spectrometry
Author: Yaegashi, Yuki, Nakajima, Seizo
Location: Res. Lab., Matsushita Electron. Corp., Osaka, Japan
Section: CA076000, CA079XXX Publ Class: JOURNAL
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 77 Series: 25 Issue: 4 Pages: 279-96 Language: Japan
Identifiers: review mass spectrometry depth profiling

CA089141213938 R
Descriptors: Mass spectrometers and spectrographs,secondary--ion
Identifiers: depth profiling

CA089141213928A
Development of hydrogen analysis by secondary ion mass spectrometry
Author: Someno, Mayumi, Kobayashi, Mutsuhiro, Saito, Hiroshi
Location: Fac. Eng., Tokyo Inst. Technol., Tokyo, Japan
Section: CA076000, CA079XXX Publ Class: JOURNAL
Journal: Shitsuryo Bunseki Coden: SHIBAK Publ: 77 Series: 25 Issue: 4 Pages: 263-77 Language: Japan
Identifiers: review mass spectrometry hydrogen analysis, alloy hydrogen analysis review, metal hydrogen analysis review

CA089141213928A R
Descriptors: Alloys,properties;Mass spectroscopy,secondary--ion;Metals,properties
Identifiers: anal hydrogen spectrometry
CAS Registry Numbers: 1333-74-0

CA089141192568
Diffusion of cesium in high temperature alloys (a study using scanning Auger electron spectroscopy and secondary ion mass spectrometry)
Author: Herion, J., Von Seggern, J.
Location: Ger.
Section: CA071005, CA056XXX Publ Class: TECH REP
Journal: Per. Kernforschungsanlage Juelich Coden: BKEJAS Publ: 78 Issue: Juel-1483, Pages: 38 pp. Language: Ger
Identifiers: cesium diffusion high temp alloy, Nimocast cesium diffusion, TZM cesium diffusion, molybdenum cesium diffusion, nickel cesium diffusion

CA089141192568
Descriptors: Diffusion;Nuclear reactors
Identifiers: properties cesium isotopes high temp alloys base nonbase fission product
CAS Registry Numbers: 7439-98-7 7440-02-0 7440-46-20 11135-86-7 67076-97-5

CA089191596700
Secondary ion mass spectra of apatites
Author: Lodding, A., Larsson, S. J., Odelius, H.
Location: Mater. Sci. Cent., Chalmers Univ. Technol., Goeteborg, Swed.
Section: CA009004 Publ Class: JOURNAL
Journal: Z. Naturforsch., A Coden: ZENAAU Publ: 78 Series: 33A Issue: 6 Pages: 697-708
Identifiers: apatite secondary ion mass spectrometry, trace element mass spectrometry, tooth apatite mass spectra, bone apatite mass spectra, ion microprobe element apatite

CA089191596700
Descriptors: Bone,composition;Mass spectra,secondary-ion; Mass spectroscopy,secondary-ion, microprobe;Tooth;Trace elements
Identifiers: detn spectrometry detection sensitivities analysis apatites relation
CAS Registry Numbers: 1306-04-3 1306-05-4 1306-06-5 1333-74-0 2074-87-5 7429-90-5 7439-91-0 7439-93-2 7439-94-3 7439-96-5 7439-97-6 7440-02-0 7440-03-1 7440-09-7 7440-10-0 7440-16-6 7440-17-7 7440-20-2 7440-23-5 7440-25-7 7440-27-9 7440-29-1 7440-30-4 7440-38-2 7440-41-7 7440-43-9 7440-44-0 7440-46-2 7440-48-4 7440-57-5 7440-60-0 7440-61-1 7440-62-2 7440-65-5 7440-66-6 7440-69-9 7553-56-2 7704-34-9 7727-37-9 13966-27-3 13967-66-3 13967-67-4 13967-69-6 13981-68-5 13981-72-1 13981-73-2 13981-78-7 13981-97-0 13982-02-0 13982-14-4 13982-15-5 13982-24-6 14041-51-1 14092-98-9 14119-06-3 14119-10-9 14119-12-1 14119-16-5 14119-17-6 14119-29-0 14191-67-4 14191-71-0 14191-73-2 14191-88-9 14265-72-6 14265-77-1 14265-78-2 14265-80-6 14265-82-8 14265-83-9 14274-79-4 14276-58-5 14280-39-8 14280-48-9 14280-49-0 14304-84-8 14304-87-1 14304-89-3 14304-92-8 14304-93-9 14336-82-4 14336-84-6 14336-94-8 14378-37-1 14378-38-2 14378-48-4 14380-59-7 14390-75-1 14390-76-2 14391-02-7 14391-28-7 14391-29-8 14391-32-3 14392-17-7 14392-33-7 14681-54-0 14683-00-2 14683-29-5 14687-55-9 14798-13-1 14834-85-6 14867-61-9 14900-11-9 14913-64-5 14914-61-5 14914-62-6 14914-65-9 14998-96-0 15010-01-2 15034-59-0 15062-08-5 15068-71-0 15411-67-3 15749-58-3 15749-60-7

CA089181544990
Surface analysis of aluminum by high mass resolution secondary ion mass spectrometry (SIMS)
Author: Laty, P., Figaret, R., Degreve, F.
Location: Cent. Rech., Aluminium Pechiney, Voreppe, Fr.
Section: CA072001, CA079XXX Publ Class: JOURNAL
Journal: Vide Coden: VIDEAA Publ: 78 Issue: Numero Spec., Colloq. Eur. "Surf. - Vide - Metall." Pages: 29-35 Language: Fr
Identifiers: surface analysis aluminum impurity, anodic coating aluminum surface analysis

CA089181544990
Descriptors: Coating materials,anodic;Surface
Identifiers: uses miscellaneous coatings anal high mass resoln secondary ion spectrometry analysis detn anodically coated aluminum impurities
CAS Registry Numbers: 7429-90-5 7439-89-6 7439-95-4 7440-50-8 7440-66-6

CA089151269540
Elemental microanalysis of enamel and dentin by secondary ion mass spectrometry (SIMS). Deciduous and permanent teeth from high and low fluoride area
Author: Petersson, Lars G., Lodding, Alexander, Koch, Goran
Location: Inst. Postgrad. Dent. Educ., Jonkoping, Swed.
Section: CA013013, CA001XXX Publ Class: JOURNAL
Journal: Swed. Dent. J. Coden: SDJOD5 Publ: 78 Series: 2 Issue: 2 Pages: 41-54
Identifiers: mineral element tooth distribution, fluoride tooth mineral element

CA089151269540
Descriptors: Mineral elements;Tooth,dentin;Tooth,enamel; Waters,potable
Identifiers: biological studies deciduous permanent fluoride relation response
CAS Registry Numbers: 7429-90-5 7439-92-1 7439-93-2 7439-95-4 7440-09-7 7440-17-7 7440-23-5 7440-24-6 7440-39-3 7440-44-0 7723-14-0 7782-41-4 7782-50-5 16984-48-8

CA089141225990
Analysis of tin-nickel (SnNi) electroplate by secondary ion mass spectrometry, ion scattering spectrometry, and Rutherford backscattering
Author: Schubert, Rudolf
Location: Bell Lab., Columbus, Ohio
Section: CA079006 Publ Class: JOURNAL
Journal: J. Electrochem. Soc. Coden: JESOAN Publ: 78 Series: 125 Issue: 8 Pages: 1215-18
Identifiers: surface analysis nickel tin electroplate, secondary ion mass spectrometry surface, ion scattering spectrometry surface electroplate, Rutherford backscattering surface analysis, oxide detn nickel tin electroplate, hydroxide detn nickel tin electroplate

CA089141225990
Descriptors: Hydroxides;Oxides,analysis;Surface
Identifiers: detn nickel tin electroplate ion scattering Rutherford backscattering secondary mass spectrometry nonbase surfaces alloy
CAS Registry Numbers: 7440-02-0 7440-31-5 11110-83-1

Print 3/5/1-55
DIALOG File4: CA SEARCH 77-78/VOL 90(02) (Copr. Am. Chem. Soc.) (Item 1 of 55) User4930 18jan79

CA09002012740N
Secondary ion mass spectrometry and Auger electron spectroscopy investigations of Vb metal foils prepared for hydrogen permeation measurements
Author: Boes, N., Zuechner, H.
Location: Inst. Phys. Chem., Univ. Muenster, Muenster, Ger.
Section: CA066003 Publ Class: JOURNAL
Journal: Surf. Technol. Coden: SUTED8 Publ: 78 Series: 7 Issue: 5 Pages: 401-11
Identifiers: hydrogen permeation VB metal foil, vanadium foil permeation hydrogen, niobium foil permeation hydrogen, tantalum foil permeation hydrogen

CA09002012740N
Descriptors: Electron emission,Auger;Group VB elements;Mass spectra,secondary-ion
Identifiers: properties permeation through foils niobium tantalum vanadium corrosion cleaning relation hydrogen spectroscopy Auger study uses miscellaneous films Group VB use
CAS Registry Numbers: 1333-74-0 7440-03-1 7440-05-3 7440-25-7 7440-62-2

CA089262255738
The gas ion probe: a novel instrument for analyzing concentration profiles of gases in solids
Author: Kiko, J., Mueller, H. W., Buechler, K., Kalbitzer, S., Kirsten, T., Warhaut, M.
Location: Max-Planck-Inst. Kernphys., Heidelberg, Ger.
Section: CA079006 Publ Class: TECH REP
Journal: Report Coden: D2REPU Publ: 77 Issue: MPI-H-77-V-40,AED-Conf-77-602-001, Pages: 10 pp.
Citation: INIS Atomindex 1978, 9(17), Abstr. No. 394143
Avail: INIS
Identifiers: lunar sample analysis rare gas, rare gas profile ion microprobe, secondary ion mass spectrometry, helium profile detn lunar sample, neon profile detn lunar sample

CA089262255738
Descriptors: Helium-group gases,analysis;Mass spectrometers and spectrographs,secondary-ion;Mass spectroscopy,secondary-ion;Moon;Solids
Identifiers: detn profile lunar samples probe thermalizing box rare materials
CAS Registry Numbers: 7440-01-9 7440-59-7

CA08926224849J
SIMS study of iron-nickel and iron-chromium alloys. III. Dependence of emission of diatomic cluster ions on alloy composition
Author: Riedel, M., Nenadovic, T., Perovic, B.
Location: Boris Kidric Inst. Nucl. Sci., Belgrade, Yugoslavia
Section: CA076011 Publ Class: JOURNAL
Journal: Acta Chim. Acad. Sci. Hung. Coden: ACASA2 Publ: 78 Series: 97 Issue: 2 Pages: 197-206
Identifiers: secondary ion mass spectrometry alloy, iron alloy SIMS cluster, nickel iron alloy SIMS cluster, chromium iron alloy SIMS cluster, cluster iron SIMS iron alloy, SIMS iron alloy clustering

CA08926224849J
Descriptors: Mass spectra,secondary-ion;Mass spectroscopy,secondary-ion
Identifiers: base emission diat cluster ions iron alloys multiple component compns
CAS Registry Numbers: 11123-62-9 37303-81-4

CA08926224848H
SIMS study of iron-nickel and iron-chromium alloys. I. Investigation of the sputtering of the alloys
Author: Riedel, M., Nenadovic, T., Perovic, B.
Location: Boris Kidric Inst. Nucl. Sci., Belgrade, Yugoslavia
Section: CA076011 Publ Class: JOURNAL
Journal: Acta Chim. Acad. Sci. Hung. Coden: ACASA2 Publ: 78 Series: 97 Issue: 2 Pages: 177-85
Identifiers: sputtering SIMS iron alloy, chromium iron alloy SIMS sputtering, nickel iron alloy SIMS sputtering, mass spectrometry SIMS alloy sputtering, secondary ion mass spectrometry alloy

CA08926224848H
Descriptors: Mass spectra,secondary-ion;Mass spectroscopy,secondary-ion;Sputtering
Identifiers: nonbase effects base iron alloys multiple component systems
CAS Registry Numbers: 11123-62-9 37303-81-4

DIALOG File4: CA SEARCH 77-78/VOL 90(02) (Copr. Am. Chem. Soc.) (Item 5 of 55) User4930 18jan79

CA089242022234C
Inspection of hardened boron steels
Author: Fujino, Mitsukatsu, Murayama, Junichiro
Location: Japan
Section: CA055005 Publ Class: PAT
Journal: Japan. Kokai Coden: JKXXAF Publ: 780802
Pages: 4 pp.
Identifiers: steel hardening boron solid soln, mass spectrometry boron steel
Patent No: 78 87796 Applic No: 77/3267 Date: 770113
Class: G01N33/20
Assignee: Sumitomo Metal Industries, Ltd.

CA089242022234C P
Identifiers: uses miscellaneous steel hardening alloying secondary ion mass spectrometry anal boron alloy
CAS Registry Numbers: 7440-42-8 12597-69-2

CA089231964844R
Secondary ion mass spectrometry. Cationization of organic molecules with metals
Author: Grade, H., Cooks, R. G.
Location: Dep. Chem., *Purdue Univ., West Lafayette*, Indiana
Section: CA022002 Publ Class: JOURNAL
Journal: J. Am. Chem. Soc. Coden: JACSAT Publ: 78
Series: 100 Issue: 18 Pages: 5615-21
Identifiers: secondary ion mass spectrometry, cationization org mol metal

CA089231964844R
Descriptors: Ionization in gases,cationization;Mass spectroscopy,secondary-ion;Metals,reactions;Organic compounds,reactions
Identifiers: relation properties silver compds nonbase mols
CAS Registry Numbers: 87-85-4 95-54-5 120-12-7 150-13-0 623-26-7 1317-39-1 7440-06-4 7440-22-4 7447-39-4 7761-88-8 12665-23-5

CA089221902791F
Digital image processing in ion microscope analysis: study of crystal structure effects in secondary ion mass spectrometry
Author: Fassett, J. D., Morrison, G. H.
Location: Dep. Chem., Cornell Univ., Ithaca, N. Y.
Section: CA079001, CA075XXX, CA076XXX Publ Class: JOURNAL
Journal: Anal. Chem. Coden: ANCHAM Publ: 78 Series:
50 Issue: 13 Pages: 1861-6
Identifiers: secondary ioi. mass spectroscopy analysis, digital image processing ion microanalysis, crystal structure effect ion microanalysis, iron polycryst ion microprobe analysis

CA089221902791F
Descriptors: Crystal structure;Mass spectroscopy,secondary-ion;Photographs;Surface structure
Identifiers: analysis anal polycryst digital image processing intensity contrast microanal effect sample
CAS Registry Numbers: 7439-89-6

CA089221897816G
Secondary ion mass spectrometry depth profiling and simultaneous electrical investigation of MOS structures
Author: Barsony, I., Marton, D., Giber, J.
Location: Phys. Inst., Tech. Univ. Budapest, Budapest, Hung.
Section: CA076013 Publ Class: JOURNAL
Journal: Thin Solid Films Coden: THSFAP Publ: 78
Series: 51 Issue: 3 Pages: 275-85
Identifiers: mass spectrometric depth profile MOS, secondary ion mass spectrometry, silicon silica depth profile, interface charge silica silicon, semiconductor MOS elec compn

CA089221897816G
Descriptors: Electric property;Energy level,surface;Mass spectroscopy,secondary-ion;Semiconductor devices,metal-oxide-semiconductor
Identifiers: properties spectrometric depth profiling study structures contg simultaneous *profile* relation investigation
CAS Registry Numbers: 7440-21-3 7631-86-9

CA089221894165
Secondary ion mass spectrometry
Author: Okano, Jun
Location: Coll. Gen. Educ., Osaka Univ., Osaka, Japan
Section: CA076000 Publ Class: JOURNAL
Journal: Zairyo Kagaku Coden: ZAKGA5 Publ: 77
Series: 14 Issue: 2 Pages: 112-19 Language: Japan
Identifiers: review secondary ion mass spectrometry

CA089221894165 R
Descriptors: Mass spectroscopy,secondary-ion

*U.S.Government Printing Office: 1980 — 657-064/813